

CIO

THE RESOURCE FOR INFORMATION EXECUTIVES

Why Your Company
Will Be Safer with
Security Outside IT

HANDOVER SECURITY

BY CHRISTOPHER KOCH Page 48

PLUS

MERGERS

How BP's CIO manages IT in an acquisition-hungry environment

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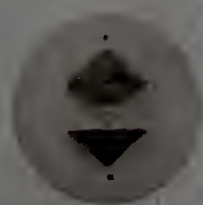
CRM

Hard lessons learned from the upgrade that cost AT&T Wireless \$100 million in lost revenue

Page 56

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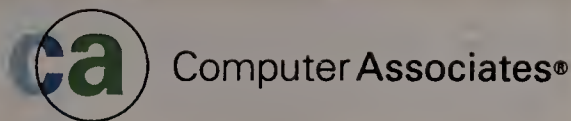
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In these days of powerful, highly complicated IT solutions, it's good to know there's a company now offering powerful, highly uncomplicated ones.

And, it's good to now know exactly who that is.



VOL. 17 • NO. 13 • APRIL 15, 2004

Cover Story

SECURITY | 48

Hand Over Security

Physical and information security have been converging, often under the control of IT. But companies are increasingly moving the role of policing security out of IT and into the hands of an independent CSO. Here's why you should consider doing the same. *By Christopher Koch*

COVER PHOTO BY STEPHEN WEBSTER



Capital IQ CTO William Murphy (right) felt ethically compromised—not to mention overworked—by hanging on to security. So he requested that new CSO Ken Pfeil (left) report to a managing principal, not him.

Features

PROJECT MANAGEMENT | AT&T WIRELESS AT&T Wireless Self-Destructs | 56

The story of a botched CRM upgrade that cost the telco thousands of new customers and an estimated \$100 million in lost revenue. Hard lessons learned. *By Christopher Koch*



A VC council is "a forum where there's no pressure, and you really get a chance to have real communication between your peers," says E-Trade CTO Josh Levine.

MANAGEMENT STRATEGIES | BP In Sync with His CEO | 66

For five years, BP CIO John Leggate has managed people and IT systems in concert with his CEO's acquisition-hungry strategy. His mantra: Integrate always, outsource often, and make technology pay—or don't make it at all. *By Susannah Patton*

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CIOs and venture capitalists are back together. VCs are eager for CIOs' insights on startups. CIOs get access to and influence over the latest technology. *By Kim Girard*

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It's getting harder for companies to sustain growth and create value on their own. It's time to loop customers into the act. *By C.K. Prahalad and Venkat Ramaswamy*

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Business Savvy

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APPLY FOR THE PRESTIGIOUS CIO ENTERPRISE VALUE AWARDS NOW!



For more information, see Page 97 or visit www.cio.com/awards/eva.

DEADLINE EXTENDED TO MAY 14

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Why winning an IT award is one of the most effective tools in a CIO's repertoire for running IT like a business.

By Richard Pastore

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"IT workers are becoming more ambivalent about investing themselves in their implementations. After all, quality implementations make outsourcing easier to accomplish."

—Michael Schrage, CIO columnist, on IT workers' fears Page 44

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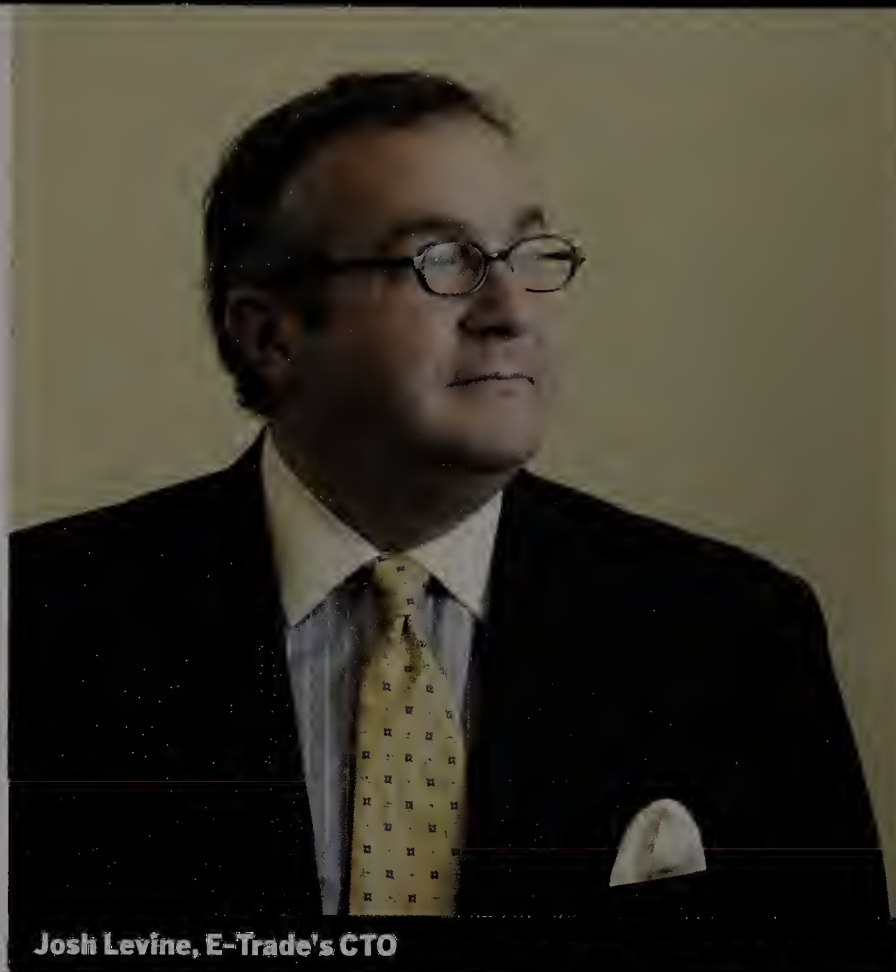
INTERACTIVE >features

Interactive features from April 15 to April 30

ASK THE SOURCE

What's the Key to a Good CIO-VC Relationship?

E-Trade CTO Josh Levine can offer some insights. He sits on a few venture capitalists' IT advisory groups. What are the benefits? What are the requirements? Read **Something Ventured, Something Gained** (Page 74), and for any unanswered questions, **ASK THE SOURCE**. Submit your questions online through April 30. Go to www.cio.com/experts.



Josh Levine, E-Trade's CTO

LEARN MORE

About the Bumpy Road of M&A Integration



John Leggate, BP CIO

BP has sometimes had a bumpy road in its bold pursuit of integration and outsourcing (**In Sync with His CEO**, Page 66), but the company was one of 100 recognized for excellence in integration for the CIO 100 Awards in 2002. **Mergers and Acquisitions** profiles BP and five others doing post M&A integration. To read the story, go to www.cio.com/printlinks.

ADD A COMMENT

How Connected Are Your Customers?

In the excerpt from their book *The Future of Competition*, C.K. Prahalad and Venkat Ramaswamy suggest that IT's future value will come from giving customers a better experience with the organization (**How to Put Your Customers to Work**, Page 82). Do you agree? Scroll to the bottom of the online version of this story and **ADD A COMMENT**.



Online Exclusive:

try the tool

ARE YOU GOING to hand over or hang on to responsibility for security? Read **Hand Over Security** on Page 48 to decide. You need to know if your practices are repeatable, documented, and regularly reviewed and updated. CIO's sister publication, CSO, and the

Software Engineering Institute's CERT Coordination Center created the Security Capability Assessment Tool to let security professionals assess their current practices. To take the test, go to www.cio.com/printlinks for the link.

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From the Editor



To read more about the award winners that *CIO* Editor Richard Pastore recently celebrated with, read our Feb. 1, 2004, issue covering the CIO Enterprise Value Award winners. Get to it at www.cio.com/printlinks.

Award Rewards

I'M SITTING AT A BANQUET TABLE elegantly set for 10, the other seats graced by tuxedo- and gown-clad executives and superintendents from Procter & Gamble and the Chicago Police Department respectively. There's electricity in the air, suspense, camaraderie. *CIO* magazine is honoring my tablemates with an award for achieving outstanding value through information technology. When *CIO* Editor in Chief Abbie Lundberg announced the winners, each group rose en masse to collect their award, buoyed by cheers (and whistles!) from the 200 or so people filling the hall.

Reading their faces, I see both pride and humility, and in one case, a little tear in the eye. After returning to the table, individuals from both P&G and the police lean over to me and say, in different words but to the same effect: "You can't imagine how important this is to us, how it affects our organization."

Yes I can.

I know winning an award is more than a brief moment in the spotlight, a temporary morale booster for overworked IT employees back home. I have proof that IT awards are in fact one of the most effective tools in a CIO's repertoire for running the IT organization like a business.

Yes. Like a business.

We recently asked CIOs at more than 100 companies with respected IT reputations to tell us how they run IT like a business. (You'll get the full results and analysis in our next issue.) Staring at me off an Excel printout, near the top of the list of *the most effective practices*, was this: "Winning and showcasing IT awards."

Huh?

Winning awards was ahead of strategic planning meetings? It outranked auditing? It eclipsed risk management, chargeback and internal customer

satisfaction surveys? I dared to ask our research guru Lorraine Cosgrove Ware to recheck the numbers. She humored me and recalculated the findings. The results were the same.

So I pondered. Winning awards increases morale, which increases energy levels, which increases productivity. A highly productive team is critical for a healthy business.

Winning respected awards from objective third parties increases credibility in the enterprise. IT needs credibility to be perceived as more than a cost center—to be considered a disciplined, effective business function. One that would be missed if it were outsourced to India or China.

Sharing credit for IT awards with the business sponsors increases mutual respect and reinforces the value of strong IT-business partnerships. The ability to partner successfully is a hallmark of any healthy business.

As soon as this lightbulb went on in my head, I got another flash—we've got to create more IT-business awards programs! We've got to help CIOs succeed at running their organizations like well-oiled businesses.

If you have any ideas for new awards programs, send them my way. In the meantime, visit www.cio.com/awards and check out our existing programs. I want to sit next to you at the next awards banquet and bask in your business glory.

Richard Pastore, Editor
pastore@cio.com

PHOTO BY WEBB CHAPPELL

All those who need to understand how to
integrate IT controls with the Sarbanes-Oxley
internal control reporting requirements... Say i[®]



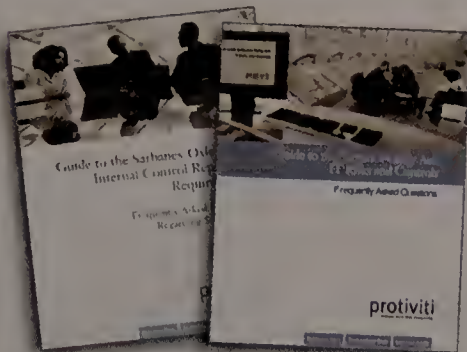
The Facts

IT controls are often at the center of the internal control environment. Forward-thinking companies are actively addressing the impact of Information Technology risks and controls as an integrated component of their response to the Sarbanes-Oxley internal control requirements. Appropriate consideration of technology controls can significantly enhance management's ability to rely on other controls and could enable reductions in other process documentation and testing. Have you evaluated how the IT controls impact your financial reporting? What is your strategy for integrating IT risks and controls with your evaluation of internal control over financial reporting? Can you validate the operating effectiveness of key IT controls? Do you have the insight of an independent advisor?

Protiviti has developed a guide to specifically address the tough IT questions that arise when considering the role and impact of IT controls on Sarbanes-Oxley compliance.

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7-Eleven chose Microsoft over Linux because of the 20 percent savings in total cost of ownership for their 5,800 U.S. and Canadian stores' highly complex POS system. In their evaluation, 7-Eleven was looking for an option that could meet serious technical requirements with a low TCO. Their study found that only the Microsoft® platform could meet their criteria. To get the full 7-Eleven case study and more third-party findings, visit microsoft.com/getthefacts



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trendlines

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Edited by Michael Goldberg

R E S T A U R A N T I. T.

Data Mining for Carbs

Restaurant chain finds demand for Atkins dishes in point-of-sale data

T.G.I. FRIDAY'S used to be a casual dining chain known for its big burgers, mixed drinks and suspender-wearing waiters sporting buttons that promised sweet desserts. But if you've dined there lately, you may have noticed the variety of entrées and appetizers on the menu that are labeled "Atkins approved."

The logo indicates that if you're following the popular and controversial low-carbohydrate, high-protein Atkins diet, you can safely scarf T.G.I. Friday's Tuscan spinach dip, buffalo wings, sizzling New York

strip steak with blue cheese and six other main courses without guilt, knowing they've been jointly designed by T.G.I. Friday's and Atkins Nutritionals' chefs with a view to reducing carbs.

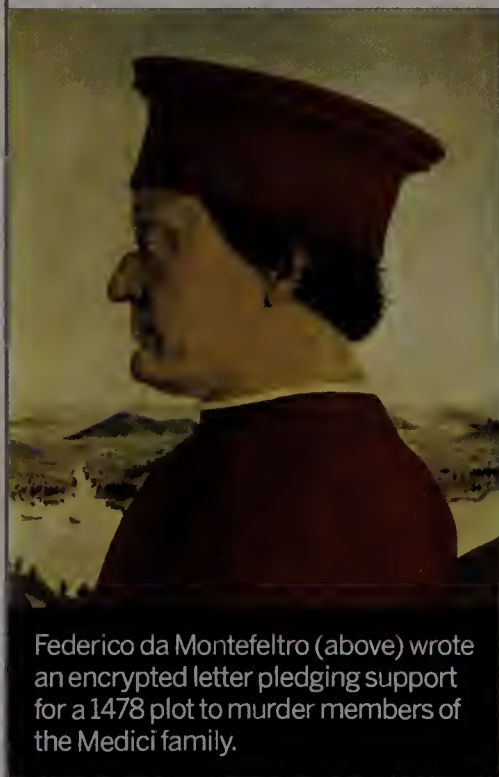
What's interesting about this carb-reducing campaign is that it's more than an effort to latch onto a hot diet trend. T.G.I. Friday's was able to uncover the low-carb demand among its patrons' special-order requests last summer. Negotiations with Atkins were done by November, and the new entrées appeared in December 2003.



Deborah Lipscomb, CIO of Carlson Restaurants Worldwide, T.G.I. Friday's parent company, says that business analysts studied the special instructions that patrons had given waiters. They noticed that a lot of guests were asking servers to hold the fries or to

replace mashed and baked potatoes with salads and vegetables. "The data told us that people were trying to eat low-carb," says Lipscomb. "When we noticed the trend, we thought it would be a good

Continued on Page 24



Federico da Montefeltro (above) wrote an encrypted letter pledging support for a 1478 plot to murder members of the Medici family.

I N V E S T I G A T I O N S

Murder Plot Most Thick

TALK ABOUT STRONG ENCRYPTION. It took five centuries to untangle the code in a letter written by a previously unknown collaborator in a famous Italian Renaissance murder plot.

The Pazzi conspiracy, named for a wealthy Florentine banking family, was audacious. Its targets: Lorenzo de' Medici and his brother Giuliano, who were ruling elites in Florence. The place: The city's cathedral, during high Mass on April 26, 1478. The goal: End the Medici rule over Florence while giving Pope Sixtus IV more power in the region.

The plot failed—Lorenzo survived his stab wound, though Giuliano died, the *Columbia Encyclopedia* tells us. The Medici's reign continued. Florentines hunted down the conspirators to exact revenge.

Except that they missed one. Now, 526 years after the deed, Marcello Simonetta, a Wesleyan University Romance language professor, has uncovered and then deciphered an encrypted letter written by one Federico da Montefeltro, the Duke of Urbino, a prominent politician and famous art collector. The duke, it turns out, was a key coconspirator who offered troops to Sixtus IV to help kill the Medici. He sent the letter two months before the murder.

The duke "was known as one of the most refined men of the Renaissance," Simonetta told *The New York Times*. That was before the professor cracked the code.

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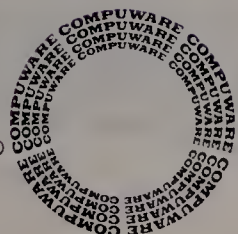
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GRASSROOTS I.T.

Activists Use Web to Preserve Famous House

FARNSWORTH HOUSE is a modern masterpiece of home design—a steel, concrete and glass single-story house in Plano, Ill., built in 1951. It's one of Ludwig Mies van der Rohe's best-known works, an icon of the International Style, studied at architecture schools the world over. And last December it was

advocacy director for the Chicago-based Landmarks Preservation Council of Illinois (www.landmarks.org).

"Ten years ago, it was mass fax. Now mass e-mail lets us more quickly and efficiently get information to our members and to connect with other organizations that

we see ourselves allied with, like environmental and smart growth groups," DiChiera says. "And our website is critical for background and updates."

The Chicago group is a tiny band of eight compared with the Washington, D.C.-based National Trust. Its 300-member staff boasts more sophisticated fund-raising and lobbying operations. The Trust recently generated thousands of e-mails pressuring the Senate to reject a rollback of heritage protection requirements in federal road projects (which it did), says Dolores McDonagh, vice president of

membership development.

The Trust farms out the hosting of its complex membership software, but in-house it maintains a million-record database, accounting software, a network linking regional offices and historic sites, numerous websites and a BlackBerry server, McDonagh says. The Trust uses Capwiz demographic and organizing software to zero in on constituencies and tailor appeals, says assistant Web editor Meghann Sullivan.

Online donations jumped from \$29,000 in 2002 to \$100,000 last year (out of \$9 million total), says McDonagh. Online donors tend to be younger and more generous than the overall membership, she adds.

Daniel Bluestone, director of the University of Virginia's historic preservation program, says that while e-mail and websites may increase communication, "preservation is about developing place attachments, and it's possible that the more we're in cyberspace the less we're living in real space." —Ted Smalley Bowen

Preservationists used e-mail and other tools to save van der Rohe's Farnsworth House (above) from an uncertain fate.

scheduled for auction, with no holds barred on what could happen to the structure.

That's when, advocates say, tools of the Internet age—online communications, data mining and demographic software—made a real difference in their campaign to save Farnsworth House from an uncertain future. Historic preservation groups used websites and e-mail appeals to friends of architecture far and wide. That and media coverage prompted enough phone pledges to allow the preservationists to close the bidding at Sotheby's at \$6.7 million. The National Trust for Historic Preservation plans to open the Farnsworth House as a museum this spring.

Political organizing and fund-raising fixtures such as direct mail and phone banks aren't going away, but preservation groups are finding that new tools make them more effective. Websites and e-mail allow preservation groups to quickly assemble coalitions of politicians, developers and citizens to draw up and circulate plans, and repeat the process if needed, says Lisa DiChiera,

Data Mining

Continued from Page 22

idea to explore putting low-carb items on our menu."

Using a business intelligence tool from Cognos, the IT staff at Carlson Restaurants captured data on patrons' orders that waiters and waitresses had entered into the restaurants' point-of-sale systems and put it into data sets that business analysts could dissect quickly and easily.

Since Hollywood hunks such as Brad Pitt and screen sirens Sarah Jessica Parker and Renee Zellweger attributed their sculpted abs and pared-down proportions to high-protein regimes, millions of Americans began pooh-poohing pasta, potatoes and *pain*. Even the executive team at T.G.I. Friday's is meticulously monitoring its carbohydrate intake, Lipscomb says. "Low-carb just happens to be a trend at T.G.I. Friday's," she says. "Because we live it, we saw the relationship between how we're eating and what our customers want in the [point-of-sale] data."

The business analysts who made the discovery took their findings to the executive team, whose members knew competitors were offering low-carb meals. Competitor Ruby Tuesday rolled out its selection of 30 low-carb menu options on Nov. 11, 2003, 28 days before T.G.I. Friday's followed suit. Others following the trend include P.F. Chang's China Bistro.

Wanting to one-up the competition, Carlson Restaurants approached Atkins Nutritionals, the company founded by the late Dr. Robert C. Atkins to provide food products and nutritional supplements in support of the eponymous diet, about jointly developing low-carb lunches and dinners, and licensing the Atkins brand. "We felt the best way to communicate to our guests that we are here to help them in their lifestyle choices was to have a brand-name partnership," says Lipscomb.

While Lipscomb admits to being a little lax in her personal devotion to the diet, she proudly notes that by last February, her executive team has collectively lost almost 90 pounds.

—Meridith Levinson

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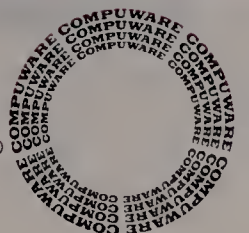
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By the Numbers

By Jon Surmacz

Your CEO Still Doesn't Get IT

MORE THAN TWO-THIRDS of CIOs say that their CEOs view IT as a cost of doing business—and not, unfortunately, as a business enabler. That's according to a survey of more than 700 CIOs by Meta Group. Findings from CIO's "State of the CIO 2003" survey showed similar numbers: A whopping 84 percent of 539 respondents said IT was budgeted as a cost center, while only 16 percent said IT was budgeted as an investment center

that creates new business capabilities.

While you know that IT has strategic value, chances are your CEO doesn't, and it's up to you to show him. According to Jonathan Poe, senior vice president at Meta Group, CIOs typically aren't proactive in communicating and demonstrating IT's value to business executives. Those who believe that solving alignment problems will put IT on the CEO's radar.

How CIOs Say Their CEOs View IT

Transformation center

We let IT do high failure R&D.

2%

Strategic center

IT returns measured value to the corporation.

8%

Value center

We get a return on our budget.

21%

69%

Cost center

IT is expensive.

What CIOs Are Doing to Change That Perception

Improving alignment between business and IT

Value-management efforts

Creating, capturing and communicating IT values

Leadership

Making better decisions despite IT's increased complexity

CIOs focus on improving alignment almost twice as much as value management.

SOURCE: Meta Group

Best Practices

Strengthen and nurture the important relationships. Street-smart CIOs manage executive relationships in a high-touch manner (lots of face time) that simultaneously increases business perception and CIO credibility. "A strategic relationship with the CEO requires a lot of reinforcement," says Meta Group's Jonathan Poe. "Relationships taken for granted are typically short-lived."

Mediate via portfolio management.

Portfolio management (the practice of administering IT projects and assets as an investment portfolio with expected payback returns) can help overcome the gulf between business and IT executives. IT portfolios have transparent and holistic views of the organization, which help businesses understand more fully the collaboration needed to balance and satisfy enterprise and line-of-business requirements.

Make value an everyday execution.

Most CIOs understand that they need to communicate IT value. Before communication, however, they must create and demonstrate IT value, both strategic (such as time-to-market) and tactical (system availability).

Mold a staff to reflect your values and leadership style.

"Too many CIOs make do with an inherited staff that was built for someone else [who has left]," says Poe. Skilled CIOs assemble staff and deputies who both enhance their strengths and overcome their shortcomings. By possessing a staff that shares a vision, mission and principles, an IT organization will more consistently reflect the thoughts, words and deeds of its leader—the CIO. "Not having nearly identical communication and action is what causes businesses to question CIO authenticity, integrity and credibility," says Poe.

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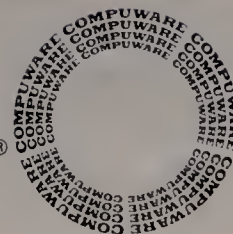
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DATA MINING

Must-See TV Ads

An idea to tailor ads to individual viewers raises privacy concerns

AMERICANS ARE RUSHING to purchase digital personal video recorders like TiVo so that they can zap pesky TV commercials right out of their lives. TiVo sales from August to October alone soared 73 percent compared with the same period in 2002, and the commercial television industry has good reason to fear that devices such as TiVo could spell the demise of an advertising gravy train.

Now advertisers are testing data-mining software designed to get through to TiVo users, according to a recent story in *Communications*, the monthly journal of the nonprofit Association of Computing Machinery (ACM). But the software that meets Madison Avenue's needs could create new privacy concerns for consumers because it can profile TV viewers and deliver targeted advertising to them via their beloved TiVos.

This is how it would work: The TiVo would record its patron's viewing patterns, and software in the recorder would use statistical models—together with any additional information collected from the viewer—to develop a demographic profile. "We already have a large data set from the Nielsen Co. that shows who people are, based on what they watch," explains William Spangler, assistant professor of IT

at Duquesne University and a coauthor of the ACM story. "We know, for instance, that people who tend to watch bass fishing shows weekly and golf and the sitcom *Friends* are men aged 45 to 50 with a certain income."

After profiling the viewer, the system would choose specific ads from a stock inventory and download those to the individual's digital video recorder (DVR). "Our idea is that it would be like being in a movie theater, when ads are presented prior to actual viewing so they don't intrude on the viewing," Spangler says. That timing, Spangler hopes, would distinguish TiVo ads from current television ads that are so annoyingly intrusive that they set off the stampede to TiVos in the first place.

Spangler and his colleagues at Duquesne are still developing statistical models that can more precisely predict the demographics of particular viewers. And as they are quick to note in their ACM article, there are prickly privacy issues that must be ironed out before such data-mining techniques can be applied.

Spangler says, for instance, that such a

device could work only with an opt-in process—consumers would have to agree to receive advertising in this way in return for some incentives, like getting a better price on their DVR.

That's a noble thought. But the recent history of online data mining suggests that entertainment industry executives, rather than embracing the idea of opt-in, would inevitably push for an opt-out policy that leaves it to individual consumers to say they don't want their viewing habits collected in large databases. It could end up like another privacy issue for legislative policy-makers to tackle. The Do Not Call list has been a hit. Can you see a Do Not Advertise registry?

—Alison Bass



Blowing Our Own Horn: CIO Wins Honors for Excellence

CIO MAGAZINE last month won top honors in the prestigious Jesse H. Neal National Business Journalism Awards for an article detailing the disastrous four-day crash of a Boston hospital's computer network. The article from *CIO*'s Feb. 15, 2003, issue, "All Systems Down," by Senior Editor Scott Berinato, won the Grand Neal as the best submission in the field of 1,282 entries.

The article, which judges said impressed them with its "outstanding marriage of practical information and thrilling narrative," also took home the Neal award for best single article among magazines with more than \$7 million in revenue. In addition, *CIO* won the award for best single issue of a magazine in its class for the Oct. 15, 2003, issue featuring the cover story "The Incredible

Shrinking CIO," by Senior Writer Stephanie Overby.

This is the second year in a row that *CIO* has won the Grand Neal in the contest run by American Business Media, an association of 3,700 business-to-business magazines and online titles.

Continuing *CIO*'s roll, the American Society of Magazine Editors named *CIO* a finalist in the general excellence category in the



2004 annual National Magazine Awards, the most prestigious awards program in the magazine world. The winners of that contest will be announced May 5.

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Washington Watch

Edited by Elana Varon

In N.C., Technology Equals Prosperity

Senate candidates back pro-tech policies

THIS YEAR'S North Carolina Senate race pits Rep. Richard Burr—a conservative Republican advocate for telecommunications and biotech—against moderate Democrat Erskine Bowles—an investment banker with tech industry ties who was President Clinton's chief of staff. Job losses in a tech-friendly region are a top concern for state voters.

North Carolina lost more than 22,000 tech jobs in 2001 and 2002, according to the American Electronics Association, in addition to more than 150,000 textile and manufacturing jobs since 1990. "Economic issues are going to be part of the [campaign] discussion," says Thad Beyle, a professor of political science at the University of North Carolina at Chapel Hill. Burr has pushed for less regulation of the telecom industry to promote jobs; Bowles says retraining workers and enforcing trade agreements should be priorities.

Burr, now serving his fifth term in Congress, sponsored a 1999 bill establishing a biomedical imaging and bioengineering center at the National Institutes of Health, which Burr says will aid early cancer detection. The health-care and pharmaceutical industries, both major employers in North Carolina, are among Burr's top contributors, according to the campaign finance site OpenSecrets.org.

A member of the House Energy and Commerce Committee, Burr says minimal regulation of the telecom industry will encourage investment



Democratic investment banker
Erskine Bowles



Republican Rep. Richard Burr

in a fiber-optic infrastructure for the Internet. He says fiber-optic cabling maker Corning has enough plant capacity in his state to cover the demand for fiber nationally—and give North Carolinians jobs. As of February, Burr had received nearly \$100,000 from the telecom industry. When it comes to outsourcing, Burr says he would consider incentives for companies to shift jobs to low-cost rural areas.

Bowles, who narrowly lost the 2002 Senate race against Republican Elizabeth Dole, has overseen some now-defunct technology companies. After leaving the White House in 1998, Bowles joined investment banking company

Forstmann Little, through which he served as chairman of Metiom, an e-commerce software company, and as a board member for telecom vendor McLeodUSA. From 1999 to 2000, Bowles chaired the North Carolina Rural Prosperity Task Force, which led to the establishment of a commission to promote rural Internet access.

In 2002, Bowles' Democratic primary opponents criticized his support for Nafta, saying the 1993 treaty cost thousands of textile and manufacturing jobs. Now, unions are among Bowles's top contributors, providing \$39,000 to date. Michael Brader-Araje, a Bowles adviser, fund-raiser and software entrepreneur, says Bowles wants to establish workforce training programs to offset potential job losses from trade pacts and toughen enforcement of existing agreements.

—Grant Gross

Another Sarbox Reprieve

After Microsoft letter, SEC extends compliance deadline

PUBLIC COMPANIES now have until November to comply with Sarbanes-Oxley provisions requiring that they document their internal financial controls. CIOs can thank Microsoft.

In March, the SEC extended for the second time the deadline for compliance with Section 404, so far the most expensive and IT-intensive part of law. The decision was in response to a January letter drafted by Microsoft and signed by its CFO, along with the CFOs of Cardinal Health, Costco, Procter & Gamble and the WD-40 company. The group argued that the existing June deadline didn't allow enough time to react to anticipated rules defining how auditors should evaluate companies' internal financial controls. Three of the five companies, including Microsoft, have fiscal years that end in June. The others' fiscal years end in August.

The five companies argued that they need more time to test their systems and financial-reporting processes against the new standard, which was eventually issued by the Public Company Accounting Oversight Board on March 9. Says Steve David, CIO of P&G: "We don't want to spend extra money to prepare for something that won't be audited, and not prepare for things that will."

It's no coincidence that the CIOs at the five companies are involved with Sarbox compliance. But Richard Roth, chief research officer with the Hackett Group, says lots of CIOs are still out of the loop. Now, they will have more time to get involved.

—Ben Worthen



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A CIO's Best Friend

CIO honors the cowinners and honorable mentions in our best admin contest

IN COLLECTING CIOs' NOMINATIONS for our best administrative assistant contest (in honor of Administrative Professionals Day on April 21), we learned that CIOs rely on their assistants to do a lot more than screen visitors and manage schedules. Our two winners share a crucial quality: They are essential to the success of their CIOs.



Esther Medrano

Assistant to 3Com CIO Ari Bose;
relies on trust and humor to do her job

When Medrano read about this CIO magazine contest, she jokingly told her boss, Bose, "Here's your chance to brag about me."

He did just that, touting his administrative assistant's ability to handle his hectic travel schedule, to manage IT purchase orders and other IT accounting procedures, and to ensure he has relevant information and time to prepare for meetings with senior management. Most important, though, Bose says that "one of Medrano's greatest strengths is in ensuring the confidentiality of information she has access to and treating this in a very professional manner."

It's this mix of trust, professionalism and camaraderie that makes a great administrative assistant and CIO pairing. One that can guard executive-level corporate information, but also joke about entering her for this award. Medrano has been with Bose for five years now, starting when he was director of architecture. Medrano says for her, the key to being a good administrative assistant is trust and communication. She says Bose is her boss, but also her friend.

Margie Brossett

Assistant to Sears senior
VP and CIO Garry Kelly;
acts as an IT information hub



How good would it be to get advance word on a possible e-mail interruption or immediate notification about systems problems—not only what they were but how long before your IT team will have everything running smoothly again?

Those are some of the many things Brossett does that make Kelly say she's the best executive assistant he's ever had. "Margie runs my office efficiently and effectively," Kelly says. "I couldn't get through my day without her."

No wonder. Brossett acts as an IT hub, sitting with Kelly on a floor with the company's top management (CEO, CFO and nine other executives) and managing relationships with 21 other administrative aides in IT, with whom she keeps in contact about meeting project deadlines and arranging troubleshooting sessions. She's a fixture at Sears, having started more than 30 years ago in the accounts payable department before joining Kelly in 2001. Brossett says knowing what department—or specific person—to contact for help is crucial to her and Kelly's effectiveness.

It also helps, Brossett says, that she and Kelly have a friendly working relationship built on professional respect.

—Julie Hanson

Honorable Mentions

CIOs CAN RELY on the best assistants to handle multiple tasks, to lead by their example, and even to manage budgets and IT projects. The honorable mentions in our contest are:

Terry Bouslough, executive assistant to Marguerite Moccia, CIO of the **Bureau of Alcohol, Tobacco, Firearms and Explosives**, is a Toastmasters veteran who uses that experience to communicate effectively with people from all walks of life, winning praise from the agency's employees and the public alike. An experienced administrator, Bouslough takes the time to mentor younger staff, an activity that makes her popular among colleagues.



Dawn Hill

Michelle Cometa, administrative assistant to Diane Barbour, CIO at the **Rochester Institute of Technology**, started her job about 20 months ago, when Barbour was reviewing her organization. The result? Cometa ended up taking on roles that would otherwise have gone unfilled, like producing a monthly newsletter about the institute's IT department and a series of technology seminars for members of the department. Both programs, Barbour notes, "have been a tremendous success."

Dawn Hill, administrative assistant to Thomas Jarrett, CIO and secretary of the **Delaware Department of**

Technology and Information (DTI), has managed relationships between her office, the governor and the state legislature, earning the respect and trust of policy-makers.

"Dawn inspires others in DTI with commitment, enthusiasm, extra effort and dedication. She is much more than just a support staff person to me," notes Jarrett.

"She has been my right hand, my mentor, a cheerleader as well as an anchor when needed."

Sandy Sosa, executive assistant and office manager for Michael G. Williams, vice president and CIO at **The New York Times**, is not nicknamed

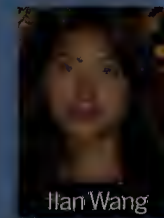
"Ms. Perfection" for nothing. "She makes me look good by saving the company big dollars—doing by

herself what most others would outsource," Williams notes, adding that Sosa handles event planning and

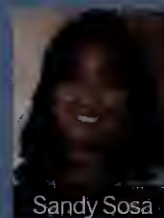
travel logistics for hundreds and has created a Lotus Notes program to manage office set-ups for new hires at the newspaper.

Ilan Wang ranks as the best administrative

assistant that Dennis S. Callahan, executive vice president and CIO at **Guardian Life**, has seen in a 37-year career during which he's kept as many as four assistants busy. Wang exercises flawless judgment in handling sensitive matters, Callahan notes, adding that she manages his calendar and global travel schedule so that "anyone can reach me when needed, and that I receive mail and important messages wherever I am."



Ilan Wang



Sandy Sosa

INTEGRATION: THE GATEWAY TO

Competitive Advantage

Solutions that Turn Your Data Challenges into New Business Opportunities

WHEN IT COMES TO HONORING BUSINESS IDEAS, managing information for competitive advantage definitely rates a gold star.

Information today is increasingly vital to companies. Managed wisely, corporate information yields rich resources of insight to help companies worldwide create new revenue streams and enhance existing lines of business. For many organizations, information truly is the most valuable asset they possess.

But to harness the full power of their information, companies must draw from a cohesive body of business data that is linked enterprise-wide. That calls for data integration. Executives cannot mine corporate data successfully until they integrate disparate systems that contain that data, and therefore enable the information to flow freely throughout the enterprise.

For many executives, one of the pure mandates of business leadership is to make data more effective and valuable. "Data management's importance continues to escalate in today's business environments, with increases in data volume and support for multiple data sources. Companies now seek data integration solutions that can accommodate these broader enterprise needs," says Doug Laney, VP and Director, META Group. "Hybrid data integration

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technologies that provide a single mapping interface, real-time visual operations management, and multiple data integration modes will dominate by 2006/07." Moreover, as new regulations regarding the retention and management of corporate information take hold, managing data wisely becomes more a requirement than an option.

"Information is a critical factor," says Nigel Stokes, CEO of DataMirror, the data integration and protection

Of course, there are a number of obstacles in the path of executives who seek to create and exploit an integrated flow of information throughout their companies. Among them:

Fragmented Pools of Data

Information systems have grown in functional silos over the years, using incompatible technology, so it can be difficult to retrofit existing disparate systems to integrate information. To create one consoli-

Company-wide Integration

Strategies Are Difficult to Pull Off

Creating and building an integration effort that is aimed at addressing system and informational integration enterprise-wide can be both expensive and complicated—causing many companies to shy away from the concept.

Integration Solutions: DataMirror
Among the companies chartered to respond to the integration challenge is DataMirror, a leading

"Data management's importance continues to escalate in today's business environments."

—Doug Laney, VP and Director, META Group

solutions vendor based in Markham, Canada. "Whether industry-specific like HIPAA or wide-ranging like Sarbanes-Oxley, regulatory compliance raises the profile of issues relating to corporate governance and the control and monitoring of data," he says. "It's absolutely critical that companies get control of their integration process."

The Integration Challenge

Savvy executives today recognize that to be successful in the Information Age, their companies must be able to leverage an integrated informational environment. In fact, data integration regularly appears as a top priority in polls of information executives. Also, many analysts report that data integration issues are among the top concerns of their clients.

The focus makes sense. Software applications are increasingly becoming the repository and primary tools for meaningful information analysis, and smart CIOs realize the importance of feeding applications with real-time updated transactional data.

dated view of the customer, for example, companies would need to draw information from order entry, inventory, accounting and customer service systems, just to name a few.

Huge Legacy Investments

While it may be tempting to solve the problem by building integrated systems from the ground up, the reality is that many companies have millions of dollars invested in their current infrastructure. When there are already systems that work, it's hard for CIOs to make and sell a business case for expensive infrastructural projects that lack a defined ROI.

Difficult to Achieve Real-time Information Updates

While many companies do have some form of data integration, much of it is not based on up-to-the-minute information. Instead, IS staffers replicate production data at intervals into a user-accessible database; how often that information is updated depends on the company and the application. Real-time updates often are deemed too expensive and complicated for all but the most mission-critical applications.

provider of live, secure data integration and protection solutions. DataMirror's comprehensive family of LiveBusiness™ solutions helps customers easily and cost-effectively capture, transform and flow (CTF) data throughout the enterprise.

Attracted by DataMirror's long history of customer satisfaction and financial stability, along with its technical excellence, more than 1,800 companies have gone live with DataMirror software, including FedEx Ground, Debenhams, Tiffany & Co., and Union Pacific Railroad.

Acushnet Company, a golf equipment manufacturer based in Fairhaven, Mass., used DataMirror's Transformation Server™ to integrate its new customer portal. "The people who helped us get set up were very professional, and the software works very well," says Acushnet CIO Peg Nicholson. "It's been one of the most pleasant experiences I've ever had with a software product."

Steve Wallace, CIO of Fairport, N.Y.-based Constellation Brands, a leading international producer

“The right time isn’t good enough; real-time is what customers need.”

—Nigel Stokes, CEO, DataMirror



and marketer of beverage alcohol brands, uses DataMirror software to replicate data from his ERP system. Before signing on as a customer, Wallace did his homework—and came away impressed by what he learned. “They’re well respected according to Gartner analysis,” Wallace says, “and they’ve been around for a pretty long time. They are one of the larger players.”

Although customer service and financial stability are vital, in the end the products have to live up to market expectations, and—according to testimonials—DataMirror’s integration products pass the test with flying colors.

The key is DataMirror’s dedication to the concept of real-time integration—something many companies want, but few vendors can provide. “Real-time information flow is vital to providing a competitive advantage, as well as controlling costs, data monitoring and gaining control of the customer relationship,” says Stokes. “Most successful businesses are differentiating on customer experience and competing by using information in real time. There’s less and less latency—the right time isn’t good enough; real-time is what customers need.”

For many companies, real time integration continues to gain in importance.

Acushnet, for example, made sure that its customer portal had two-way, real-time data synchronization

with the company’s production environment. “We wanted to give customers the ability to do things like place orders, pay bills and check orders,” says Nicholson. “We felt it was the next frontier.” For that to happen, customers needed to see information that was up-to-

the-minute—nothing less than real-time data would do. “Why would you want to look at last night’s data when changes have been made during the day?” she asks.

Since implementing DataMirror’s solution, Acushnet’s customer

CUSTOMER PROFILE:

Driving Customer Satisfaction at Acushnet

For Fairhaven, Mass.-based Acushnet Company, more contact with the customer is always better. So CIO Peg Nicholson jumped at the chance to add a web portal to her company’s arsenal of customer contact points. “Over time we’ve moved from taking orders by mail, to phone, then fax and 800 numbers,” she says. With 14,000 accounts to service, “We felt that the next frontier was the web.”

The company, which makes leading golf products under the brand names Titleist, Pinnacle, Cobra, and FootJoy, also wanted to be able to give customers an avenue to approach the company 24/7. “Many golf pros do a lot of selling on weekends,” says Nicholson. “We wanted them to be able to enter orders for custom clubs on a Saturday afternoon if that’s what the situation called for.”

But because Nicholson didn’t want customers accessing the production data on her company’s AS/400, she turned to DataMirror to help populate and integrate a SQL Server for the customer portal. “We wanted two-way replication so we’d be in sync on a real-time basis,” she says.

She hasn’t regretted her choice. “We found the product to be very solid,” she says. “For what we wanted, it was the perfect solution.”

Her customers seem to think so, too. “The customer response has been great, and it’s been an effective channel to establish conversations with customers,” Nicholson says. “We’ve added features and functions each quarter, based on customer requests.”

CUSTOMER PROFILE: Keeping Data Safe at Constellation Brands

When CIO Steve Wallace began a rollout of J.D. Edwards software across Constellation Brands North America, a leading international producer and marketer of beverage alcohol brands, such as Corona Extra, Black Velvet and others, one thing came into sharp relief: consolidating the regional smaller databases into a single one highlighted the need for better data recovery.

The company, with \$3.5 billion in sales and 7,500 employees, needed a solution that would work across a mixed-platform environment, and would safeguard the vital data that resided on its ERP system. Wallace chose DataMirror's Transformation Server to transfer data from the central ERP system to a data warehouse that acts as a mirror site. "Transformation Server takes real-time transactions and pushes them into a data warehouse," he says. "If we needed to, we could fail over onto that and keep running."

Equally important, Wallace relies on the secondary



data warehouse as an information repository that employees can query without impacting performance on the main database. DataMirror also renames the data with more intuitive names, making it easier for end users, and does it all in real time. "Real-time information is important for a number of reports that we run," he says. "If you're closing the books, you need immediate numbers. You can't wait for the information to get updated at night."

Wallace plans to use Transformation Server as he extends the J.D. Edwards implementation to data centers in Europe and Australia. "Each will have a DataMirror environment for local business intelligence and data recovery," he says. "We'll then use Transformation Server to push consolidated reports into the corporate office to wrap things up."

response has been tremendous. "We have more than 5,000 customers who use the system, and they love it," Nicholson says.

Another DataMirror selling point is Transformation Server's ability to integrate data between disparate databases. "One of the reasons we like DataMirror is that we have a mixed environment—AS/400, Unix and so on—and it's strong on running agents on all the platforms," says Constellation Brands' Wallace.

Moreover, DataMirror products don't require a huge infrastructural overhaul because they work easily with existing products. "CIOs can't just reinvest in new software packages to get better integration. They need to leverage existing investments in technology and have old and new coexist," says Stokes. "We give the ability to work off of legacy systems without having to code up to new standards. To be practical, companies have to deal with the past and the future."

Integration challenges are never a simple matter, and there is no one-size-fits-all strategy. CIOs must carefully consider costs and complexity on the technology side, and weigh them against the long-term business benefit of having vital business information flow freely throughout the enterprise. Choosing the right solution only maximizes the opportunities for success.

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By Martha Heller, Director, CIO Executive Council

WORDS OF WISDOM FROM THE CIO EXECUTIVE COUNCIL

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RFID: The deadline looms large

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Going global: Big challenges from sourcing to systems

YESTERDAY'S NEWS

Cutting costs: It's a way of life. What's left to discuss?

Editor's Note: The CIO Executive Council is a professional organization for CIOs. Its mission is to leverage the strengths of a large coalition of CIOs for the purpose of achieving change within our organizations and shaping the framework for the future of IT. For more information about the Council, go to www.cioexecutivecouncil.com.

The Top 10 Drivers for Innovation

Council members offer up their own ways of fostering an innovative culture

A CIO I SPOKE WITH RECENTLY says he has had it with technology. "We have all of the technology we need," he says. "What we are lacking is the innovative use of that technology—that's the really tough part." I asked several members of the CIO Executive Council to talk about how they foster innovation inside their own companies. According to Council member Stephen Warren, CIO of the Federal Trade Commission, "Innovation is doing something in a new, unexpected way," he says. "It's an epiphany, an aha." But contrary to popular belief, innovation doesn't have to result in business transformation or a huge expense. As members of the Council demonstrate below, innovation can be subtle, manageable and a core part of the IT organization.

1 DELEGATE THE FIRE FIGHTING. "You cannot drive innovation while you're putting out operational fires," says Carl Ascenzo, CIO of Blue Cross Blue Shield of Massachusetts. "Hire the best operations team you can, and stay out of their way."

2 ESTABLISH CREDIBILITY. Trust breeds innovation, and communication breeds trust. Establish a formal communication program, as Jim Burdiss, CIO of Smurfit-Stone Container, has done. "Our Office of Continuous Improvement [OCI] is responsible for communicating with the enterprise on anything that has a technical impact," he says. "If power goes down at a plant, the OCI lets every-

one know. Without the OCI, we'd have a tougher time innovating."

3 ACCEPT AND SEEK CRITICISM. "Not every idea is a good one, and some are downright lousy," says Dave Clarke, VP and CTO at the American Red Cross. "To improve your ideas, ruthlessly seek out criticism. If you can't bear to hear that your baby's ugly, you won't be a successful innovator."

4 PROVE IT. Does the idea save money? Does it increase real productivity? Will it work? "Nothing ruins your credibility faster than a business case full of holes," says Clarke. "Do your homework and get some feedback before you start shopping your idea around."



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5 LOOK AROUND. Staying inside your organization and keeping the lights on may be instinctual during down times, but it is hardly a pathway to innovation. “You have to look outside your frame of reference,” says Kent Kushar, CIO of E&J Gallo Winery. “You don’t have to be the first wagon out of the fort, but if you want to be a fast follower, you have to get out there with your customers and see what’s going on.” The same goes for your staff, says Larry Brown, CIO of Arch Coal. “The people in the trenches need to know that they have the flexibility to look at innovative alternatives.”

6 AVOID TECHNOLOGY WORSHIP. A project need not involve brand-new technologies to be innovative. “Stay off the bleeding edge,” warns Jeff Peterson, CIO of UNICCO. “Innovation is much more likely with tested and proven IT. At UNICCO, for example, we used a low-end portal toolkit to test an innovative account-management concept for how we collaborate with our customers. After receiving overwhelming interest from our customer base, we moved forward with WebSphere, a proven technology.”

7 REVISIT THE STARTUPS. In addition to innovating inside their own companies, CIOs have a role to play driving innovation in the IT industry. As such, they need to start priming the startup pump again. “We all need to open the door a little wider for the startups that will drive the next generation of external innovation,” says Scott Hicar, CIO of Maxtor. “If CIOs can collectively agree to take at least one startup technology into consideration for your portfolio, the stream will start flowing again.”

8 TIGHTEN THE PURSE STRINGS. “Constraint breeds innovation,” says Clarke. “It’s very tempting, when money and resources flow freely, to stick with tried and true solutions. When money and resources are constrained, you have to find new and creative ways to solve problems.”

9 WATCH YOUR TIMING. “Innovative technologies are like a joke. It’s all in the timing,” says Gene Elias, CIO of Quiksilver. “Expecting operating units to participate in a new project at the drop of a hat is a surefire formula for failure.”

10 FIND OPPORTUNITIES IN PROBLEMS. Don’t get so lost in a problem that you miss out on the opportunity it provides. “Let’s say an application fails because some servers are misconfigured,” says the FTC’s Warren. “While you’re doing a physical walk-down of your infrastructure to solve the problem, emerge with a baseline architecture.”

EXPERIENCE BASE

Innovation Comes in All Shapes and Sizes

Council members demonstrate their approaches to innovation in these five projects

Kent Kushar, CIO, E&J Gallo Winery PROFITABILITY

ANALYSIS TOOL AT E&J GALLO WINERY

“We developed a product management tool called the Gallo Edge that allows chain stores to do a by-store, by-bottle, shelf-space profitability analysis. The innovation here is both in the technology itself and in the fact that we are providing our external customers with a product that helps them get smarter about their business. Make your customers smarter about your whole category, and they’ll do more business with you.”

Carl Ascenzo, CIO, Blue Cross Blue Shield of Massachusetts COMPETITIVE COLLABORATION AT BLUE

CROSS BLUE SHIELD OF MASSACHUSETTS

“We took an innovative approach to application development by partnering with a competitor on an e-prescription pilot. The application allows physicians to use handhelds to write and send prescriptions. By getting together on this project, we and our competitors were each able to complete the rollout in less time and for less money, and push the industry forward.”

Earl Monsour, Director of Strategic Technologies, Maricopa Community Colleges WIRELESS LAN AT

CHANDLER-GILBERT COMMUNITY COLLEGE, ONE OF 10 MARICOPA COMMUNITY COLLEGES IN ARIZONA

“We implemented a wireless LAN for the entire college—all campuses. Access is available to students, faculty, staff and administrators. Although there are already many instances of pockets of wireless access at other organizations, we saw the innovation in an anytime, anywhere implementation. This was a true team effort involving the faculty, staff and administrators of the college.”

Jim Burdiss, CIO, Smurfit-Stone Container INTEGRATED ACQUISITION PROJECT PLAN AT SMURFIT-STONE CONTAINER

“We developed an integrated project plan for a very large acquisition. We treated business-process change, technical change and training as one large process, with IT leading the charge. We completed the project in 30 days and for \$4.5 million, when a silo approach would have taken four to six months and twice the budget.”

Scott Hicar, CIO, Maxtor SELF-SERVICE KIOSK AT MAXTOR

“Working with our customer service operations team, we created a self-service kiosk that improved the customer experience, reduced operating costs and allowed the call center to invest some of that savings in additional support staff. The real innovation lay not in the application but in the fact that we were able to make solid improvements within the environmental constraints of the last two years, when most companies were still licking some expensive e-business wounds.”

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How to Build a Great Team

Four leadership qualities
for getting things done

PEOPLE TEND TO THINK of a leader as someone who can set the agenda. But the real value of leadership lies in execution. The key difference between a great consultant and a great leader is in the ability to turn ideas into reality. What's more, while ideas can be generated by an individual, execution can be accomplished only by a team that works together.

In my previous column, I talked about the key competencies for CIOs to be able to create a compelling business-technology proposition: Great pattern recognition, street smarts and technical savvy. An additional set of competencies is required to build a great team that is skilled and loves to get up in the morning and go to work. These competencies are more like qualities than intellectual or managerial traits. They include character, leadership development, passion and influencing skills. Although these qualities are seldom emphasized in executive performance objectives, I have found them to be the "secret sauce" of great leaders with whom I have worked over the years.

Character: Doing the Right Thing

Character has been described as ethical behavior, intellectual

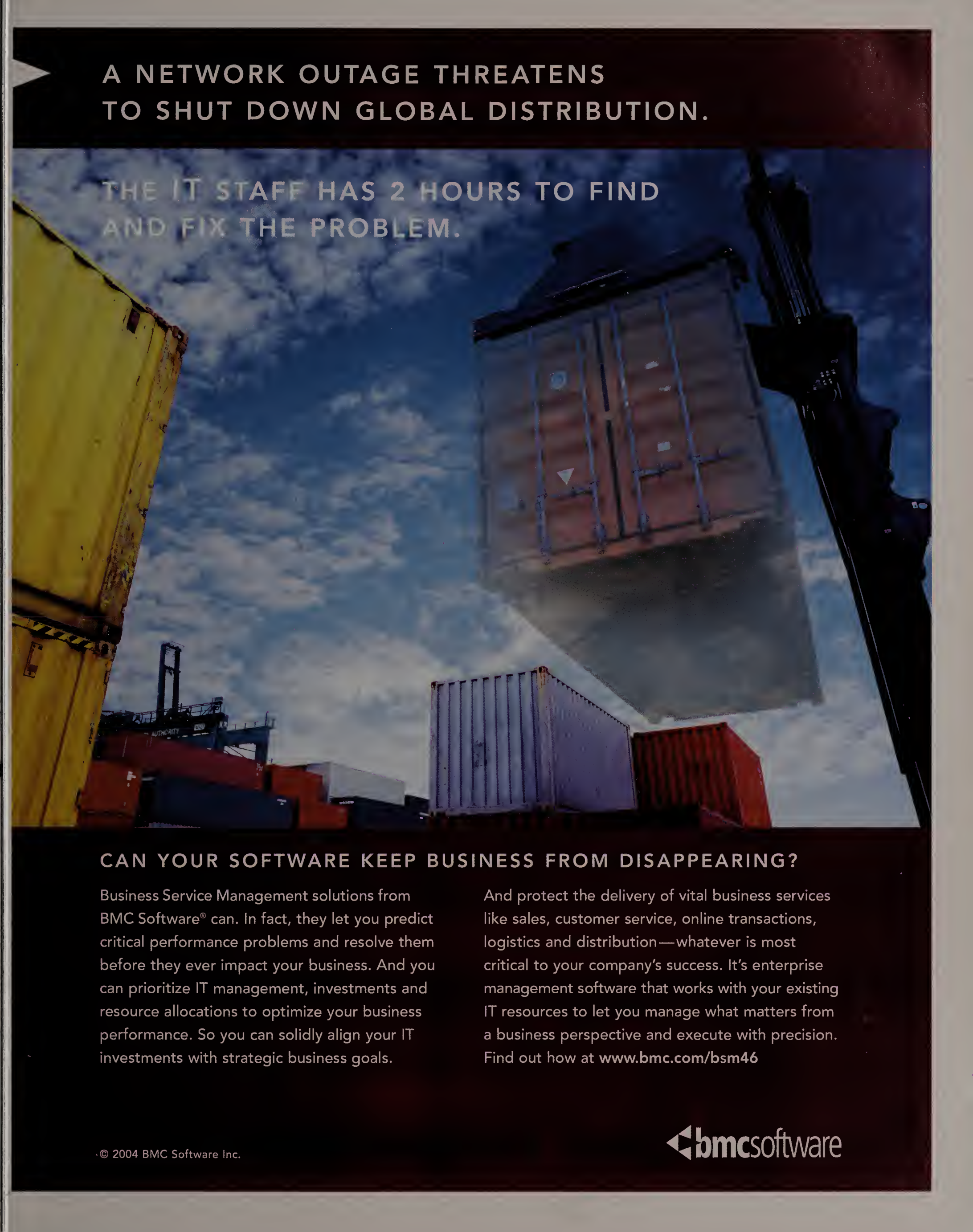


integrity, openness and honesty. These terms have come to the forefront over the past few years—the attention spawned by corporate excesses. Although Sarbanes-Oxley, corporate governance and ethical guidelines are top-of-mind these days, they are simply table stakes.

My definition of character is much more fundamental. It is what you do, not what you say. I've worked for and with many terrific leaders over the years in various corporate cultures. Some of these leaders were collaborative, others were directive; some were relaxed, others intense; some had "command presence," while others were quiet and calm.

As a young man, I found it very curious that I was attracted to so many diverse leadership styles. As the years went by, though, it became clear to me that style had little to do with it. The common ingredient all these leaders possessed was the substance of their character. No matter what the issue or the

ILLUSTRATION BY ROBERT NEUBECKER

A photograph of a port scene. In the foreground, there are several shipping containers in yellow, red, and blue. A large crane is visible on the right side, lifting a red container. The background shows a cloudy sky.

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struggle or the possible personal gain or loss, they always—not just occasionally—did the right thing. Not only the right thing from a business or economic aspect, but the right thing including social and philosophical dimensions.

This consistency of character is hard to describe but easy to recognize. People will rally around leaders who do the right things consistently. They know they can count on their leaders to be open and honest at every fork in the road and to take a stand regardless of the personal risk. When people feel their leaders are erratic, political or detached from them, they will become cynical. They will generally do their work but won't be committed. Their trust can only be built over time, so don't become discouraged if people take a "show me" attitude.

Leadership Development: The Most Important Task

The second competency required for great execution is developing the leadership skills of your team. Organizations are seldom led by a single person, no matter how charismatic. The team at the top determines the environment and the culture. The team

development. It will pay tremendous dividends and help give you and your IT organization leverage and continuity.

Passion: The Organizational Energy Level

Passion for the job is hard to manufacture, but when present, it is contagious. Enthusiasm from a leader enables people to sustain themselves through demanding times. The energy level of an organization is set at the top.

It's hard to be great at something you don't enjoy, and very few great things are accomplished without great passion. We see it in sports, communities, businesses and individuals. Don't underestimate the value of passion.

Influence and Persuasion: Better than Power

CEOs, CFOs, CIOs and other CXOs have inherent positional power. When I had just become CIO at Frito-Lay, I would sometimes say something without much thought. The next thing I knew, people were actually beginning to execute on one of those remarks—or worse, I had hurt someone with an offhand comment. I began to realize how much weight my positional power carried.

Executives tend to think it is much easier and less time-consuming to just tell their direct reports what to do. Part of leadership, however, lies in spending time to explain a directive, in giving employees perspective and in helping them understand the "why" behind the direction. This is influence—the flip side of positional power. It is easy to rely on positional power and forget the usefulness of influencing skills.

One caution on the use of influence: There's a presumption that you have all the answers—and you will set out to persuade everyone else of that. But a great leader will create an involvement with his staff and a dialogue on decision making because the door swings both ways. It's possible that you are wrong and your managers have a better idea. Understand, however, that an open dialogue doesn't relieve you of the leadership responsibility to make a decision and move the team forward.

This group of competencies is what it takes to build a great team. As important as team-building skills are, though, they only help set up the game. In my next column, I will describe the competencies required to actually play the game. **CIO**

Choosing and developing your leadership team is the most important competency of a leader. This is time-consuming—up to one-third of your time.

decides what gets rewarded, punished, recognized and ignored. Although they don't run all of the plays, they call the plays.

For CIOs, it's important to remember that the team at the top represents and reflects your character and agenda. Regardless of what you say you believe, who you choose for your IT leadership team speaks more loudly. So choosing and developing your leadership team is the *single most important* competency of a leader. This is a time-consuming task. Many great leaders talk about spending up to one-third of their time on leadership development. Since no one is perfect, everyone needs help and coaching.

Developing leaders means that you can articulate the requirements in a clear and thoughtful way. Without a basic framework of leadership skills, it's hard to evaluate and give people feedback—and without constructive feedback, most people will not change and grow. When I was at PepsiCo, developing others' skills was a major part of the life of an executive. The role models were plentiful, leadership competencies were well-known, feedback was continuous and growth was expected.

Unfortunately, most people deliver feedback only once a year in a performance evaluation, rather than conducting an ongoing structured development effort. I encourage you, as a leader, to make the investment in sustained leadership devel-

Charlie Feld is the former CEO of the Feld Group, a CIO consultancy that was acquired by EDS in January. He is now executive vice president of portfolio management for EDS. He previously served as CIO for First Data Resources, Delta Air Lines, Burlington Northern Santa Fe Railway and Frito-Lay. He can be reached at charlie.feld@eds.com.



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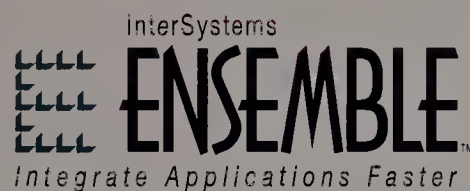
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Michael Schrage | Making IT Work

It's All About the Execution

Mad as Hell

Readers sound off on CIO leadership, outsourcing and the IT community's fading commitment to quality

READING THE RESPONSES to my column via e-mail and *CIO*'s online Add a Comment inbox brings to mind Mark Twain's venom-tipped reaction to the reelection of a particularly egregious scoundrel: "The people have spoken—the bastards!"

Not that any of my readers' insights are illegitimate in any way, of course, but it is fascinating to observe what gets the CIO community hot and bothered and what wins its compliments. So this column is about what I've been learning from your feedback.

The obvious problem with columns like this is that the sampling of opinion is so skewed. The Outraged, Infuriated and Upset who think you a moron are far more likely to comment than the Nice Column folks. Indeed, "Liked the column" e-mailers are lovely—but reveal little—while the readers who think your cerebellum is a total waste of neurons vituperatively go to great lengths to explain why your ideas are moronic. Sometimes they've even got a point.

The best feedback comes from people who have a story to relay, an experience to share or a question to ask that forces me to rethink why I wrote what I wrote. Because this is a column



about the challenge of IT implementations, rather than the wonderfulness of Big IT Ideas, you have to take people's real world observations more seriously.

The readers who respond to this column are typically intelligent, articulate, concerned about their professional futures and frustrated by how difficult it is to work productively with their business counterparts. My columns are often criticized not for sounding jaundiced or cynical but for not being cynical enough!

Intriguingly, the columns that get the most intense feedback are the ones in which I argue that CIO leadership means having the courage to decide where IT shouldn't be a leader in organizational change. Few things undermine legitimacy quicker than trying to do too much. Overextended IT organizations typically end up with the worst of both worlds: overpromised expectations and underdelivered implementations.

That sort of CIO critique drew a lengthy diatribe from Jim

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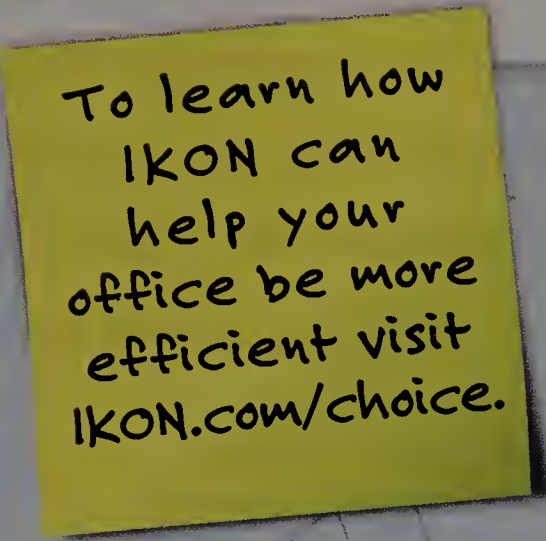
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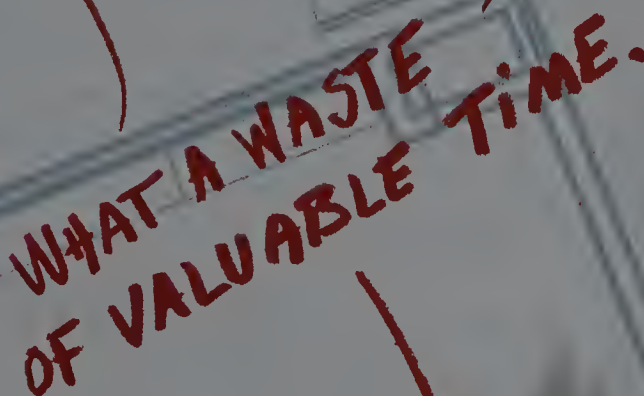
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A small, high-angle photograph of a person sitting at a desk with a computer monitor and keyboard. A red arrow points from this scene towards the central sticky note.

Clustered solution
could automatically
send jobs to
another printer.

A small, high-angle photograph of a person standing next to a tall server rack. A red arrow points from this scene towards the central sticky note.

Storing these
electronically
would make them
easier to access.

The text "WHAT A WASTE OF VALUABLE TIME." is written in a bold, red, slanted, sans-serif font, mimicking handwriting. A red arrow points from this text down towards a scene of a person at a printer.A small, high-angle photograph of a person standing next to a large office copier or printer. A red arrow points from this scene towards the central sticky note.

Could manage
all printers
from her office
with remote
monitoring tools.

Wells, a CIO with a large health-care organization in the Midwest (reprinted with his kind permission), that captured the sentiments of many stalwart CIO champions. Wells wrote:

"CIOs who have not established policies and procedures to prevent departments from going their own way are not CIOs; they are directors or managers, whatever they call themselves.

"CIOs [who] do not report to the CEO are not CIOs; they are directors with a fancy title and salary.

"CIOs who do not enable (now that is another buzzword that academic and consulting types love but has no real meaning) are not CIOs. CIOs should run for office as that is how they must spend their days in order to stay employed. The prime role of a CIO—for those who have never served in the trenches—is to determine what is needed, wrap this into a flexible strategy,

remains a growth industry that continually renews, refreshes and extends the business capabilities of the enterprise. It's just that IT may no longer be a growth industry for IT staff as individuals. In other words, there's a feeling that—pincer between India and automation—their IT future is more like the "silicon collar" than a profitable profession with harder work, less security and, of course, less money than before.

Even worse, IT workers are feeling that their CIOs have given up on them as partners. Look at the comments posted after my "Memo from the Future" (see www.cio.com/print-links) and one can practically smell the unhappiness. These aren't primarily CIOs responding, mind you; they're the people who report to and work with the CIOs.

What's the takeaway for the CIO reader? That the IT com-

munity's commitment to quality implementation seems to be fading. People are becoming more ambivalent about investing themselves in their IT implementations.

Why? Many hard-working IT people fear that quality implementations will make them less indispensable

Feeling betrayed by their bosses and their clients, IT workers are becoming more ambivalent about investing themselves in their implementations. After all, quality implementations make outsourcing easier to accomplish.

present this strategy to his boss (the CEO) and then present it to the executive (not) team, the executive steering committee (said governing body duly formed by the CIO, chaired by the CIO, and a fully representative body of all disciplines).

"As the 'guru of technology,' it is the role of the CIO to introduce business change through the use of technologies—not just the darling of the e-commerce world's current buzzword, but all technologies. If crucial changes need to be made to basic technologies in order to take advantage of newer ones, so be it.

"The CIO is a mentor, internal consultant and teacher. If the CIO is not comfortable with all of these, then get a job selling used cars."

Mr. Wells did not respond when I pointed out that his rather idealistic RFP for top IT executives would effectively exclude over half the CIOs who read this magazine.

But that obscures the larger point: The post-bubble, outsource-driven, but-just-how-much-should-IT-matter? world has created

a level of fear in the higher echelons of the IT ranks that makes Edward Yourdon's ominous and terribly timed *Decline and Fall of the American Programmer* (a book that came out in 1992 before the Internet boom) read like a happy prequel to *Who Moved My Cheese?*

Everybody still agrees that IT

to the organization rather than more so. They're afraid that their CIOs are using them. Indeed, quality implementations make outsourcing the implemented app or system easier to accomplish.

Even worse, they feel that their clients and customers are looking at them less as partners than as expensive "necessary evils" that must be tolerated. At least, until the implementation is complete or the whole thing can be outsourced or automated.

The idea, the notion, the very possibility that an implementation becomes both a source of insight and a platform for future enhancements and refinements is ignored. Somehow, the belief that once an app, a system or a capability is "designed," all that's left is the nitty-gritty of "implementation" has become a dogma in certain digital circles. Please reread Mr. Wells's comments; implementation is irrelevant.

The people who are sending me e-mail and posting comments are in pain. They are feeling betrayed by their bosses and by their clients. They're questioning their economic value as "implementers" in an era where implementation is overwhelmingly perceived as a "cost." They're worried. So am I. You should be too. **CIO**

Michael Schrage is codirector of the MIT Media Lab's eMarkets Initiative. He can be reached at schrage@media.mit.edu. Please send your comments to us via e-mail at letters@cio.com.



PHOTO BY JOHN SOARES

Share Your Opinion

Michael Schrage says that IT workers are feeling that their CIOs have given up on them as partners. And that will hurt the quality of their work. What do you think? Go online to post your reactions in the **ADD A COMMENT** box at the end of this article.

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HAND OVER SECURITY

Physical and information security have been converging, often under the control of IT. But companies are increasingly moving the job of policing security out of IT and into the hands of an independent CSO. Here's why you should consider doing the same.

BY CHRISTOPHER KOCH

FOR 40 YEARS there has been little reason for anything computer related to fall outside IT's command. But that era is coming to an end. The evolving and increasingly important role of information security requires the background of a geek and the instincts of a cop. Information security crashes together two functions: traditional corporate security and IT. The ex-cops over in corporate security who watch the doors and suspicious behavior are using more and more technology to get their jobs done. And the stakes in an IT security breach have risen so high that IT people who know firewalls but can't fathom the motives of a disgruntled employee are no longer able to protect their companies from what could be serious financial losses, extended network downtime and badly damaged relationships with customers.

So struggle over who gets information security is growing: IT, the traditional security group or a new function that is distinct from both groups. There is already clear evidence that IT is going to lose the fight—and more important, that it should. In an October 2003 *CIO* magazine survey, respondents who described themselves as “very confident” in their companies' security were nearly

twice as likely to have information security reporting outside of IT than those who described themselves as “not at all confident” in their security. The reasons for the confidence are clear: Confident companies suffered nearly six times fewer security events, had less downtime and fewer financial losses than the less confident companies. And they allotted more money toward security: The percentage of the IT budget that confident companies spent on security was double that of the not confident group (14 percent

Reader ROI

- ▶ Why many CIOs should push the responsibility for protecting security out of IT
- ▶ How some CIOs and CSOs work together to set security policies
- ▶ Why CSOs should report to a business executive such as the COO or CFO



Capital IQ CTO **William Murphy** (right) says he lobbied for the hiring of CSO **Ken Pfeil** (left) in order to make security a “competitive advantage” for his company.

10 Ways to Tell You Need an Independent CSO

Deciding whether you need an independent chief security officer is a balance of four issues: The number of external privacy and security regulations you face, the size of your customer base, the number of internal employees and the degree of privacy and security that customers demand for your information—for example, financial services and health care face high demands in this regard. When these factors change or get out of whack, it may be time to carve out a separate CSO role that reports outside of IT. Here are some clear warning signs that say you need a CSO.

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| <p>1 You've lost track of what you have in the infrastructure.</p> <p>2 The company has grown a lot or changed its business.</p> <p>3 Your customers demand extra privacy and security.</p> <p>4 You weren't regulated and now you are, or the regulations have changed.</p> | <p>5 Your competitors start using their success with security as a competitive weapon against you.</p> <p>6 The company doesn't have an explicit written security policy or can't enforce the one it has.</p> <p>7 Outsourcing deals haven't been examined for security issues.</p> | <p>8 Data has not been segmented into more secure and less secure.</p> <p>9 Every manager and employee doesn't believe that security risk is real, close by and imminent.</p> <p>10 A major security incident has happened, and you need to rebuild trust with customers.</p> <p style="text-align: right;">-C.K.</p> |
|--|--|--|

versus 7 percent), and they paid more attention to organizational reporting and security policy issues.

There are other reasons to move security. Some argue that keeping responsibility for policing security within IT can pose a potential conflict of interest for the CIO, who may be tempted to give short shrift to security concerns in favor of getting IT projects in on time and under budget. And catching hackers requires the ability to think like a criminal, something IT employees are not trained to do. Then there's the workload issue: Don't CIOs have enough on their plates these days without having to deal with the burgeoning and evolving challenge of worrying about all aspects of a company's security? Having security responsibilities reside in the hands of a CSO or equivalent—and in particular someone who reports outside of IT—could be better for the CIO's career and the health of the IT group as well as the overall organization. A CSO can focus full-time on security, unlike a CIO who is often pulled in several different directions.

But the issue is still up for debate. Some CIOs are concerned that if security policy is moved out of the IT department, they would lose influence but still be held accountable if something goes wrong. CIOs for small and midsize companies argue that it's not practical to create a separate role that is responsible for security. And CIOs in industries heavily regulated by the federal government also worry that letting go of security could mean falling out of compliance.

With the debate raging, if you're not seriously examining where information security falls on your org chart, it's time to do so. And there is mounting evidence that owing to its growing complexity and importance to besieged organizations, security probably should be separate from IT. The dialogue about the

future of IT security is just beginning. Chances are, the discussions should be going on inside your company too. In this story, we'll outline the main issues to debate.

CUT SECURITY LOOSE

Security experts say that most IT security threats are from within the company. If that's the case, then keeping IT security within IT is a simmering conflict of interest. "If you think of information security as a policing function, then having [security staff] report to the CIO has the IT infrastructure policing itself," says Bill Spennow, a security consultant and former chief information security officer of the Georgia Student Finance Commission. Samantha Thomas, director of the information security office for the California State Teachers' Retirement System (CalSTRS) puts it more starkly: "If you're in IT and they've given you security, how can you conduct an unbiased investigation of the friend you've sat next to for years?" Thomas and her fellow CISOs in all California state departments now report to their department chiefs because of an executive order from then-Gov. Gray Davis in 2002.

Those who advocate moving security out of IT say that new, complicated challenges require someone who can look at the bigger strategic picture of security across the company, advocate for tougher security measures in all functions of the company and report security issues to a higher authority than the CIO.

These are the issues that made William Murphy, CTO of financial data and analytical software provider Capital IQ, ask his company to hire a CSO in 2002. "I had handled security adequately since the company began in 1998, but I wanted security to be more than adequate; I wanted it to eventually become a competitive advantage for us," says Murphy. The growth of the

company (from five people when Murphy started to 900 today) combined with a growing customer base, a much broader product line of security-sensitive products and customers that had increasing security expectations sparked the switch.

But Murphy says he also felt ethically compromised—not to mention overworked—by hanging on to security. He specifically requested that the new CSO report to a managing principal, not him. “I said, ‘I don’t think the CSO should report to me because I have competing motivations,’” he recalls. “As a CTO you have these constant internal pressures to get functionality out and keep performance high and all these other typical IT issues. And it’s too easy to push security to the side. I felt like Dr. Jekyll and Mr. Hyde, constantly trying to do in-the-moment risk analysis on things” from the typical performance issues on the one hand and security on the other. “I felt like I needed a church and state separation,” he adds. “Security and IT should be like the Supreme Court and the executive branch. You want them to work together, but you want that independent oversight into what you’re doing so that you don’t make bad decisions. I just don’t believe that putting that much power in one person’s hands is the right thing for shareholders.” Murphy says the new setup is effective.

Siemens, the German manufacturing, IT and services giant, had this epiphany eight years ago, according to Harald Hoefler, CIO of Siemens Canada. Information security has reported to the CFO’s office ever since. “If the CSO reported to the CIO, security would not be strong enough,” says Hoefler. The CSO has two primary roles at Siemens: To secure the systems and to audit them for adequate security. The CSO can do neither well without independence from the CIO, Hoefler argues. “Say I have problems with the network and I haven’t done my work correctly,” he says. “If I have this information security officer in my area, he’d point it out, but I’d try to fix the problem in a way that it doesn’t get [revealed to the other top executives]. What you want is to have all the top executives aware of the problems and working together to fix them.” Hoefler says that kind of disclosure and cooperation can occur only when security reports to an executive with broad managerial responsibilities for the company as a whole, like the CEO, CFO or COO. “The CFO is in a position to influence all the C-level managers and get the budget to do [information security],” adds John Pomeroy, CSO for Siemens Canada. Though different divisions of Siemens handle the specific security role differently, increasingly the divisions are combining infor-

mation and traditional corporate security under a CSO, like Pomeroy, who reports to the CFO.

MOVE ACCOUNTABILITY

Of course, it’s one thing to transfer responsibility for information security outside IT, but if accountability doesn’t move with it, the CIO will be in big trouble. That’s why some CIOs do not even want to consider letting go of information security. “Even if IT security was moved out of IT, if something happened, I would still be on the hook,” says Tom Smith, former CIO of Waste Management, who retired in March. “I think IT security is part of a CIO’s role and responsibility as opposed to a conflict of interest. I feel personally responsible for internal IT security, whether it be physical security or data security. To delegate that to a third party such as another security group outside of IT, I just think it’s the wrong thing to do.”

But proponents of jettisoning security out of IT disagree. “I hear that concern 100 percent,” says Capital IQ’s Murphy. “But when there is a breach, the CSO and I go to the CEO’s office together. It’s a teamwork issue. It’s not ultimately who’s on the hook for something—it’s a question of having people full-time worried about security versus IT. It’s the future of the company, and as executives you should both be accountable.” Murphy says he’d rather have Capital IQ’s CSO, Ken Pfeil, go with him to see the CEO than go by himself.

When a CIO keeps information security inside IT, even if he creates a CSO-type role, he is much less likely to seek someone from outside the department or the company to cast a fresh eye on the ways the company handles security, says Spernow. The CIO is more likely to give it to a trusted lieutenant who shares the same views on security that he does. “How many bosses are going to be receptive to the information security person saying here’s how you’re screwing up? They can’t. It’s just human nature,” says Spernow. “Typically CSOs are best when they come from the outside because they have to be a change agent, and if you’re bringing the baggage of people you owe favors to, it’s tough.”

THINK LIKE A CRIMINAL

When corporate security began to be a distinct function in most companies during the ’50s and ’60s, companies usually wanted someone experienced at looking for and handling bad guys—former cops, mostly. IT security rarely requires wrestling anyone

Of course, it’s one thing to transfer responsibility for information security outside IT, but if accountability doesn’t move with it, the CIO will be in big trouble.



Siemens Canada CIO Harald Hoefler (left) says that because the CSO, John Pomeroy (right), reports to the CFO and not to him, the security function is independent and therefore stronger.

to the ground, but the mind of a malicious hacker isn't that much different from that of a more physically oriented bad guy, argue security experts. So why do companies automatically assume that IT people can think like criminals? "Every information security policy I've ever seen is a joke because they are written by people who can be trusted," says Spernow, who has worked in corporate security for Fidelity Investments. "We have these exercises we do with IT people to try to show them that their intuitive response is to trust people. I wouldn't hire anyone for a security position unless they were really paranoid."

IT people also don't have much experience at developing policies and procedures for handling security issues beyond the technical issues, says Anne Rogers, director of information safeguards for Waste Management. According to Rogers, responsibility for security policies and procedures across the company has moved

from IT to Waste Management's corporate security function, while responsibility for selecting technology platforms and implementation remains with IT (a security management structure that former CIO Smith disagrees with). "We're looking at security policies and procedures above and beyond IT and how those systems affect other areas in the company," she says. "There are skills and background for doing this that security people have and most IT people don't." For his part, Smith says IT retains responsibility for security policies and procedures that affect IT systems. It's an example of the struggle over security that is beginning to occur in many companies.

USE INDEPENDENT AUDITS

Mary Finlay, deputy CIO of Partners Health-Care System, has information security reporting to her. She acknowledges the conflict of interest. For health-care companies like hers, she says, the conflict is swept away by external regulations like the Health Insurance Portability and Accountability Act (HIPAA) and auditing bodies that have strict terms for compliance. "There are three arms to HIPAA, and one of them is all about security," Finlay says. She says Partners also has internal and external auditing groups and an internal compliance group that monitor information security issues. That's a lot of checking and balancing. For companies that don't have that kind of external scrutiny and regulation, a separate information security function may be their only independent voice. "I do agree that

you need the checks and balances in place somehow," says Finlay. "I like that there is this separate part of the organization that is keeping us on our toes."

Rod Hamilton, CIO of Hygeia, a health-care provider network, says the size of his company and his budget doesn't warrant having a separate information security function. He was able to bring in a person who spends half his time on security tasks by devoting the rest of the time to database analysis. HIPAA defines the more strategic, high-level thinking about security that this staffer does not have the time for. "HIPAA is a godsend in a way because it gives us a clear definition of what we should be doing and gives us the opportunity to bring someone else in to say whether we are meeting the requirements," says Hamilton.

But are external regulations or audits really dependable alternatives to an independent, internal CSO? Capital IQ's Murphy

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Who Is the CSO?

Ambassador Sells security to the organization and creates urgency

Negotiator Gets budget resources from all functions in the company

Change agent Helps create and sell plan for building better security

Troubleshooter Fixes unanticipated problems

Enforcer Deals with people who will insist on being part of problem rather than the solution

SOURCE: Bill Spernow, security consultant

doesn't think so. "Sarbanes-Oxley isn't going to help you make a decision when a powerful executive comes to you and says we can get important new functionality that a client is demanding up and running tomorrow if you install this untested software patch right now," he says. Capital IQ's Pfeil agrees. "By using regulations or auditors, all you're doing is shifting accountability," he adds. "But it will come back full circle no matter what you do. The ones who have to implement the day-to-day security operations are still going to be on the hook. If you centralize the responsibilities for security and make one person responsible, then you've got one neck to choke."

MAKE A STRONG SECURITY POLICY

If it's not possible to move information security out of IT, then an ironclad security policy should ensure that even if the person in charge of security is IT-based, he at least has the ability to report to someone senior to the CIO, say security advocates. "If nothing else, the CSO must have real access to the other C-level people," says George Campbell, a security consultant and former CSO at Fidelity Investments. "As long as the CEO and board back a strong policy around corporate protection, that's an internal legal system that the CSO can use to manage the function."

But Campbell and others stress that unless the policy is clear and detailed—for example, all breaches must be reported immediately to the COO and immediately recorded in a report—it won't be much of a tool. "Unless it's grounded in a strong policy infrastructure that gives good guidance to employees and func-

tions in the organization on the how-tos of corporate protection, it won't happen because people won't know what to do," says Campbell. CIOs should try to get advice from companies that are bound by law to secure and protect, like health-care and financial services companies. "You can't find

a financial services company that isn't concerned about how it protects customer information or continuity, and that is founded on a good policy," he says.

And the conflict of interest that lies at the heart of the CSO-to-CIO reporting relationship can erode the best policy, says Siemens' Pomeroy. "It has to be like an independent internal auditor function within IT if it's going to work," he says. "An organization can think it has a good information security review process, but because the CIO has the final say, you're going to have problems potentially."

SECURITY IS CONVERGING

There is a small though growing trend of IT security moving under the corporate security umbrella so that security decisions all come out of one place. But experts we spoke to said there is no formula for making the decision. It depends on factors like culture, governance structure, size (and size of customer base), sensitivity of corporate data and demands of customers. Companies that are feeling increasing pressure in any of these areas should at least consider whether information security and corporate security should be consolidated into a single group.

The strongest argument for keeping information security within IT is purely pragmatic. Much of information security has to do with hard-core IT issues, and non-IT people don't understand how complex it can be. People from a pure security background can become so fixated on security that they ignore the need to make systems flexible and usable, says Finlay. "There are times when I've seen security people advocating something that makes the system so hard to use that people wouldn't use it. The job of CIO is to find the right balance." To which CalSTRS's Thomas responds, "That's why it's important for us to have a close working relationship with IT and work together as a team."

But regardless of where the CSO reports, he cannot be a shrinking violet. CSOs need an independent voice and the ability to promote the position and the need for security inside the company (see "Who Is the CSO?" this page). "If CSOs can clearly communicate their role and the role of security in the organization, it doesn't matter where they report to," says J. R. Biggs, managing director at Network Security Consulting and a former CSO for a financial services company. "You have to be able to communicate and justify your role and responsibilities and make sure everyone understands that security is the responsibility of everyone in the organization."

That sure sounds like independence to us. **CIO**

Try the Tool

Whether you're handing over or hanging on to responsibility for security, you need to know if your practices are repeatable, documented, and regularly reviewed and updated. CIO's sister publication CSO and the Software Engineering Institute's CERT Coordination Center together created the **SECURITY CAPABILITY ASSESSMENT TOOL**, which lets security professionals assess their current security practices. Find it at www.cio.com/printlinks.

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Send your stories on security challenges to Executive Editor Christopher Koch at ckoch@cio.com.

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AT&T WIRELESS SELF DESTRUCTS

The story of a botched CRM upgrade that cost the telco thousands of new customers and an estimated \$100 million in lost revenue. Hard lessons learned.

BY CHRISTOPHER KOCH

Jack Lee marked Nov. 24, 2003, on his calendar because that was the day he would finally be able to change his cell phone carrier without losing his phone number—thanks to a Federal Communications Commission ruling. But Lee, president of Tangara Technologies, a company that develops software for forms, decided to wait a day before switching to AT&T Wireless to let the chaos of “number porting” die down a little. Little did he know that the chaos was just beginning.

Lee ordered his new phone on Nov. 25. When he went to the AT&T Wireless website to check the

status of his order a day later, he was greeted with a message: “We could not find a porting request for this number in the system. Please contact Customer Care.” It was the beginning of a two-month odyssey in which Lee estimates he made 15 to 20 calls to AT&T Wireless, sent nearly as many e-mails and spent 60 hours on the phone dealing with customer service representatives or waiting on hold—with the line often going dead when AT&T Wireless’s customer service lines became overloaded.

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- ▶ How an upgrade meant to improve customer service crippled it instead
- ▶ Why having an alternative plan is essential when you’re up against a specific deadline
- ▶ Why outsourcing in the middle of an implementation can be disastrous

After being routed all over the company, Lee finally discovered what was going on. A major CRM system had crashed during an upgrade, and customer service representatives could not set up or access new accounts. The system breakdowns, which continued through February 2004, swamped other AT&T systems, gridlocked customer service phone banks and sent furious customers scurrying to other providers.

The breakdown couldn't have come at a worse time for AT&T Wireless. It deprived the telco of thousands of potential new customers and cost the company an estimated \$100 million in lost revenue. But that wasn't all. The failure so damaged AT&T Wireless's reputation that many analysts believe it hastened its sale to Cingular in February for \$41 billion, or \$15 per share, which was just under half the value of AT&T Wireless's shares when it went public in April 2000. While an AT&T Wireless spokesman says the company would have been sold regardless of the fiasco because "it was the right thing to do," the crash and resulting confusion could not have helped AT&T cut a good deal. "The system problems made AT&T look like a wounded provider, and the sharks smelled blood and circled," says Roger Entner, a wireless and mobile services analyst at The Yankee Group, a research company.

AT&T Wireless's mistakes offer valuable lessons for CIOs. For one, it's unwise to freight major system upgrades with external complications. AT&T Wireless's CRM upgrade was hamstrung from almost the very beginning by rumors of outsourcing deals and future layoffs. These rumors generated pervasive morale problems that hurt the productivity of project staff.

Second, it should be understood that complex projects require flexible deadlines. AT&T Wireless undertook a difficult upgrade that affected roughly 15 systems just before it was faced with an immovable deadline—the federally mandated Nov. 24 number portability date.

Finally, it always pays to have a plan B. Without one, AT&T Wireless was forced to move forward even as it became apparent that its upgrade would not be completed in time.

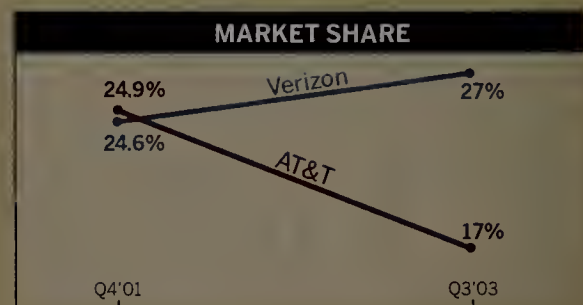
PLAYING CATCH-UP WITH THE COMPETITION

When AT&T Wireless began its Siebel CRM system upgrade in 2003, it was a company that had slipped from unquestioned market leader to middle of the pack. Its overall market share had slid from an industry-leading 25 percent at the end of 2001 to 17 percent in 2003, third behind Verizon and Cingular.

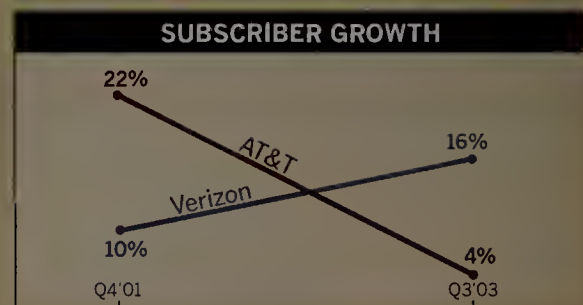
Worse, AT&T Wireless was playing catch-up on its most important technology asset, its phone network. One of the older wireless companies, AT&T Wireless made an early bet on a technology called TDMA that could not handle data transfer over cell phones—the next big thing for business customers. Even before

AT&T Wireless vs. Verizon Wireless: Losing Ground

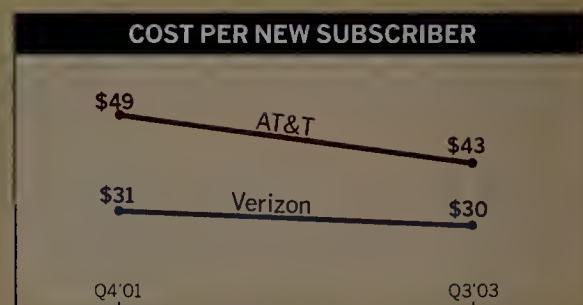
Between 2001 and 2003, AT&T Wireless lost significant ground to Verizon Wireless (now the industry leader). That's what its CRM upgrade was intended to fix. It didn't.



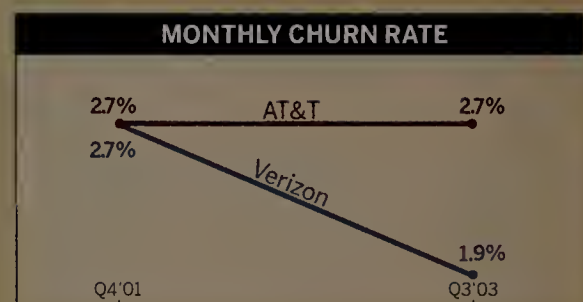
In 2001, AT&T Wireless was the market leader; by third quarter of 2003, it had fallen to third place, and Verizon had climbed from second to first.



In 2001, AT&T Wireless had the fourth highest rate of subscriber growth in the industry; by third quarter of 2003, it had fallen to sixth and last, while Verizon had climbed from fifth place to third.



In 2001, AT&T Wireless spent more money to attract new subscribers than all but two of its competitors, and in 2003, it was still spending more than Verizon, which continued to spend less than any competitor.



In 2001, both AT&T Wireless and Verizon Wireless had the same rate of customer churn. By 2003, Verizon's churn rate had dropped significantly, while AT&T Wireless's had not budged.

Source: UBS



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AT&T Wireless was spun out from its parent AT&T in 2001, it had begun a furious buildout of an expensive new network—global system for mobile communications, or GSM—that could not only handle data but had the added advantage of global compatibility with overseas providers. Only one other major carrier, Cingular, was saddled with the challenge of building out a new GSM network while still servicing the old one. The other carriers had all chosen network technologies that could handle data transfers.

GSM was a great opportunity for AT&T Wireless, but it was also a huge CRM challenge. The company had to convince its old customers to move off TDMA, which worked as well as most other carriers' networks for voice calls, and onto GSM, which had poorer voice quality, according to Morgan Stanley. It also had to convince new customers that GSM was the wave of the future, that they would soon be shipping data over their phones instead of their laptops. But customers didn't buy the pitch. By 2003, AT&T Wireless's percentage of customers on GSM was hovering at 15 percent, according to analysts, while Cingular had 35 percent of its customers moved over (thanks, in part, to its acquisition of a cellular provider with an existing GSM network). And things weren't improving. In the third quarter of 2003, less than half of AT&T Wireless's new customers were choosing GSM, while Cingular was signing up 75 percent, according to Morgan Stanley.

Everyone at AT&T Wireless agreed that the company would keep its existing customers and add more new ones if its customer representatives could handle more calls and get customers up and running faster. Customer service representatives needed about 20 minutes, on average, to work through five or six screens that fetched information from about 15 legacy systems, say former employees. Slow access to customer information records was just one of the reasons why AT&T Wireless possessed the second-highest cost per subscriber (behind Sprint PCS) of the top six national carriers in 2003, according to financial services company UBS.

WHY AT&T NEEDED TO UPGRADE

AT&T Wireless installed Siebel's CRM system in 2001 to be the front end of its customer service process. The back end, however, was a complex mishmash of systems, say former employees. Telco billing systems, for example, were stuffed full of different rate plans and arcane metering processes. Systems that tracked calls and set up new phone numbers (provisioning) communicated with hundreds of thousands of different telephone switches around the country and the world. To work for AT&T Wireless, Siebel's version 6 had to be highly customized. Though the software came with integration tools, consultants usually resorted to writing point-to-point scripts to hook the systems together. Policing the overall integration in a scenario like this is difficult at best. Indeed, a former AT&T Wireless employee who

Five Lessons from AT&T Wireless's Project Failure

It did a lot wrong. Here's what you can do right.

Have a plan B. AT&T Wireless's Siebel system upgrade involved vastly complex systems integration and testing that pushed up against, and crashed through, an immovable deadline: wireless number portability. An alternate means for accessing customer data or a plan to be able to roll back to the earlier, more stable version, if necessary, would have saved the company millions.

Keep testing requirements strong—even when projects fall behind. When projects run late, testing always suffers, with often disastrous results.

Reduce integration wherever possible. When all of AT&T Wireless's major competitors chose another company for wireless number porting, AT&T Wireless should have rethought its choice of a competing vendor, which meant extra layers of integration that ultimately failed.

Postpone layoffs and offshore outsourcing until a vital systems project is completed. Morale and productivity among the AT&T Wireless IT staff were shattered by rumors of offshore outsourcing and layoffs that swirled around the project but were left mostly unaddressed by IT leaders.

Keep the communication lines open and clear. If layoffs or outsourcing is unavoidable during a project, communicate that news clearly and get the changes over with as early in the project as possible. —C.K.

worked on the project recalls the test system crashing and remaining down for six weeks during the summer of 2002 when AT&T Wireless began preparing Siebel version 6 to deal with number portability. And when Siebel 6 was finally up and running, it still couldn't handle all the information that customer service representatives needed.

The next release of Siebel, version 7, was much more powerful. Siebel developed an industry-specific version of the new software that had many more features and could capture more telco-specific information. And new Web capabilities meant that AT&T Wireless could potentially reduce the number of customer service screens to one by building a Web portal that put all the different systems and information sources together in one place. "That was the point of the upgrade," says a former employee. "They wanted to get every-

thing on one screen so they could sign up customers faster.”

Marc Siegel, a spokesman for AT&T Wireless, agrees: “As we needed to handle more transactions, more customers, we needed a more robust system. So we upgraded. [The upgrade] was going to make it easier for our representatives to get access to information and give them a fuller array of information on the customer.”

In the spring of 2003, the company decided to upgrade to version 7.5 for the roughly 3 million customers on the GSM and general packet radio service (the data portion of the new network). TDMA customers would continue to be serviced through AT&T Wireless’s legacy Axys CRM system until they could be moved over to GSM and the new Siebel system. The project was called Odyssey.

THE UPGRADE BEGINS, BADLY

Though the upgrade promised gains in speed and simplicity, getting there was neither speedy nor simple. AT&T Wireless’s IT staff had to rip apart old links from the different legacy systems to the client/server-based Siebel 6 system and rewrite them to work over the Web. The back-end systems-integration work was so complex that it wasn’t unusual to see teams of 20 or more people assigned to write connections for a single system, says a former employee. Coordination between the teams—the responsibility of the lead integrator on the project, Deloitte and Touche—quickly got out of hand. (Deloitte and Touche did not respond to repeated requests for an interview.)

“Everything was siloed among the different groups, and we all worked independently of each other,” says a project team member. Teams would work on a revision to their piece of Odyssey, for example, only to find that when they finished testing, code had changed elsewhere in the system, rendering the testing meaningless. “In other projects I’ve worked on, the project managers would freeze code while the teams did revisions to their pieces so you could test everything against the same code base,” he says. “I didn’t hear of that happening on this project.”

Meanwhile, rumors of layoffs and offshore outsourcing began swirling around Odyssey. “[The rumors] slowed things down,” says a former employee. “When stuff like that happens, people start looking for other work. I know I was looking for other work when I should have been testing.”

MEET THE NEW BOSS

On April 10, 2003, Mike Benson, a 15-year AT&T veteran, sent a memo to employees announcing that he was leaving after three years as CIO. AT&T Wireless’s Siegel says the 48-

year-old Benson “decided to retire.” Christopher Corrado, the head of the security solutions practice for Wipro, an Indian offshore outsourcing company, was named executive vice president and CIO. Before joining AT&T Wireless, Corrado had been CTO at two divisions of Merrill Lynch, where he presided over the offshore outsourcing of portions of Merrill Lynch’s IT. Employees speculated that it was just a matter of time before offshoring began at AT&T Wireless.

“Corrado was the hatchet man—everyone knew it,” says a former employee. “We’d see our people going into these long meetings with people from Indian companies. We’d see whiteboards that had questions like, ‘What opportunity do we have to offshore/outsource?’”

Former employees say morale wasn’t helped by Corrado’s first presentation to the IT group, in which they say he proclaimed, “Come in every day and expect to be fired.” Intended to inspire the troops to greater effort, the talk backfired, says another former employee. “We all came away saying, ‘Who is this arrogant jerk?’” Corrado could not be reached for comment.

THE DEADLINE LOOMS

As November approached, AT&T Wireless was one of the last industry holdouts opposing the Federal Communications Commission’s new rule on number portability, along with Cingular and Alltel. The industry had succeeded in delaying the change since 1998 on legal technicalities, and AT&T Wireless was counting on another postponement, say industry sources. But on Halloween, the U.S. Court of Appeals for the District of Columbia Circuit rejected the appeal to move back the FCC’s Nov. 24 deadline. An AT&T Wireless spokesman told Bloomberg News that the company was ready for porting.

It wasn’t.

Things were going so badly with the Siebel CRM upgrade that there was talk on the project of trying to roll back to the old Siebel 6 system before the porting date. “Two weeks before launch there was rollback talk,” a former employee says. But project managers hadn’t preserved enough of the old system to make it feasible. There was no plan B. Project members estimated that the team

needed two or three more months of bug fixing and testing to get the system running reliably.

And the Siebel system wasn’t the only thing AT&T Wireless needed to get working before the deadline. Wireless number porting required new systems that had to be integrated with the different carriers’ CRM systems. Five of the six top providers outsourced the administration of the number changes to TSI Communica-

More on Project Management

Too bad AT&T Wireless couldn’t get it right. Even the \$3 trillion worldwide construction industry is adopting IT to manage its immensely intricate projects. And a small publisher in Salt Lake City could have taught the erstwhile wireless pro about project prioritization. We covered both recently: **CURES FOR COMPLEXITY** and **FIRST THINGS FIRST**, respectively. Find the links at www.cio.com/printlinks.

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tions and used software built by Telcordia. But in June 2002 (before the other carriers had announced they were going with TSI), AT&T Wireless chose its longtime software and administration provider, NeuStar. Ultimately, this would create serious interoperability problems for AT&T Wireless.

AT&T Wireless defends its decision by saying that NeuStar was the most experienced provider in the market, having worked on landline portability in the early '80s. It also says NeuStar's software offering was more complete than TSI's at the time AT&T made its decision.

NO TREAT, JUST TRICK

On Halloween evening, the project team tried to bring up the new Siebel system for the first time. It crashed. "It went down and stayed down," says a former employee. "They couldn't get it working again." Project staffers were brought in to work on the system for three straight days to try to rescue it, with no

report prepared by Tata Consulting Services of India outlining plans for offshoring pieces of AT&T Wireless's IT infrastructure. The report, obtained by *CIO*, also lays out plans for offshoring a portion of the support and maintenance for the new Siebel system. "You had to wonder why you were working so hard if the whole thing was going to go away anyway," says a former project employee.

On Nov. 19, *The Wall Street Journal* ran a story on planned layoffs and outsourcing at AT&T Wireless, and CIO Corrado responded in a memo to the staff: "We are in the awkward position of having reports in the press about a contract with HP before we have communicated with the employees who will be affected. We have just today signed a letter of intent with HP to deliver the services provided by the following teams: Desktop Services; Retail Field Services; Business Office WAN/Telecom; MSI Packaging; Service Desk—password reset and desktop calls." But as for bigger questions, namely that support and maintenance for the Siebel system would be outsourced to offshore provider Wipro and Tata,



CIO Christopher Corrado never directly addressed rumors that AT&T Wireless planned to outsource much of the support and maintenance for its CRM system.

luck, say former employees. The system was unstable.

Though observers could not trace specific causes for the crash, a few factors played a role. As the go-live date neared, former employees say that Deloitte and Touche project managers relaxed testing requirements for various pieces of the system. Rather than freeze the code for the system once problems began, teams continued to add new pieces to the project in an attempt to get it all working. But the new pieces simply added more errors to an already bug-ridden system, which complicated the process of finding root problems and fixing them.

"[Integration was] far more technical and far more difficult to test in advance and also fix problems once they appeared," acknowledged Michael Keith, president of AT&T Wireless Mobility Operations, in a conference call on the company's fourth quarter results.

Compounding these difficulties was the hit employee morale had taken on Nov. 16, when AT&T Wireless President and CEO John Zeglis confirmed the layoff rumors. Zeglis told analysts in a third quarter conference call that the company would lay off 1,900 workers. He did not say where the cuts would come or when. But IT managers started telling employees that layoffs would begin in February 2004, according to former employees.

Some AT&T Wireless IT employees had gotten hold of a

Corrado did not address the rumors directly. Instead, he concluded: "We currently outsource work throughout the company, including work within both Customer Services and IT. We will continue evaluating the best mix of internal and external resources as we work to achieve best-in-class margins."

In fact, AT&T Wireless was planning to move overseas more than 3,000 positions in its computer operations and customer service.

THE SECOND CRASH

The Odyssey team was still struggling to get the Siebel system up and keep it up when, on Nov. 24, customers began trying to port their numbers between carriers. That's when the software for handling number portability crashed.

TSI and NeuStar had arrived at "differing interpretations" of the industry's data standard for exchanging and verifying porting requests, known as Wireless Intercarrier Communications Interface Specifications (WICIS). The Yankee Group's Entner says that TSI modified its version of the WICIS standard without telling NeuStar. "They made changes in fields and reporting that didn't impact all their five customers but no longer made it possible to communicate with [NeuStar]," says Entner. TSI's Michael O'Brien,

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vice president of marketing, denies that changes were made without telling NeuStar but acknowledges that the two vendors had different interpretations of WICIS. (NeuStar declined to be interviewed for this story.) AT&T Wireless says that TSI crashes prior to the deadline prevented NeuStar from being able to test the process adequately, and on Nov. 24, the electronic flow of porting requests between NeuStar and TSI broke down right away.

The industry had estimated that automated ports would require 2.5 hours to complete, so the porting messages were programmed with time and date limits. If the other carrier's system didn't respond within the allotted time, the port that failed was supposed to drop into an electronic bin to be handled manually.

NeuStar's software could not respond to TSI's systems before time ran out. And the error messages weren't all getting through either. When AT&T Wireless's Porting Administration Group tried to track and resolve errors using a workflow management tool, it crashed or froze. That meant AT&T Wireless customer service representatives were in the dark when their phones lit up. Combined with their continued problems accessing Siebel, there

pretty far south."

For independent cell phone retailers, which account for about 60 percent of new sales in the industry, there was no choice. "The indirect sellers pushed other brands when they heard that AT&T was having problems," says Greg Teets, telecom analyst for A.G. Edwards. AT&T Wireless was forced to bump up commissions to independents and lower prices to try to stem the tide. It didn't work. After adding 229,000 customers in the third quarter of 2003, fifth out of the top six providers, AT&T Wireless added just 128,000 in the fourth quarter, last among the top providers and less than one-tenth the number of industry leader Verizon, which added 1.5 million new subscribers.

By January, AT&T Wireless was in the advanced stages of plans to move overseas more than 3,000 positions in its computer operations and customer service, according to *The Wall Street Journal*. (It backed off from the plan only after agreeing to be purchased.) Some employees became part of AT&T Wireless's "buddy program," in which consultants from Indian outsourcing companies Tata



While employees struggled to fix glitches in the CRM upgrade, CEO John Zeglis confirmed the layoff rumors, saying AT&T Wireless would soon lay off 1,900 workers.

was little they could do to help their customers. In that first week of porting, more than half of the complaints filed with the FCC singled out AT&T Wireless, according to The Associated Press. The FCC sent a letter to AT&T Wireless on Dec. 4, asking for an explanation, triggering a torrent of bad publicity.

"There were 50,000 [AT&T] customers per week that didn't have service because of this," says Phil Cusick, a telecom industry analyst with Bear Stearns. And many of them, like independent consultant Ian Drake, didn't stick around for a fix. After three weeks of trying to track his newly purchased AT&T Wireless phone, Drake gave up and signed on with Verizon.

A COMPANY FIRE SALE

As word of AT&T Wireless's difficulties spread, customers began deserting at a rapid clip. The problems continued through December, according to AT&T Wireless President and CEO Zeglis. "It took most of December to expand the systems capacity so that the care reps could have as much access as they needed in order to handle customer calls at the same time the salespeople were processing new orders," he said in a conference call with analysts on Jan. 22. "Frankly, our customer service went

Consultancy Services and Wipro were assigned to AT&T Wireless employees to learn their jobs.

In February, 220 AT&T Wireless IT employees were told that they would be released from the company in March. According to one of the terminated employees, another round of 250 layoffs is planned for June and the same number for September. "It's tough," an employee said in February. The Indian workers "basically follow people around all day and pepper them with questions." Other former employees say some staffers resisted helping the consultants. "People would make project decisions when the Indians weren't around," a former employee says.

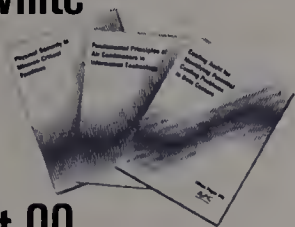
On Feb. 17, Cingular announced that it was buying AT&T Wireless.

That same day, Deborah Sawyer's voice-mail box began filling up with messages. Sawyer, a partner for executive search firm Morgan Howard Worldwide, says she received inquiries from 12 different AT&T Wireless IT executives looking to move on.

But for their company, the odyssey was over. **CIO**

Executive Editor Christopher Koch can be reached at ckoch@cio.com.

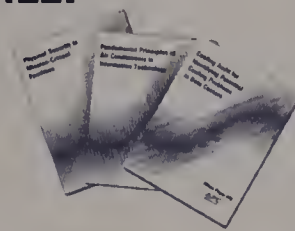
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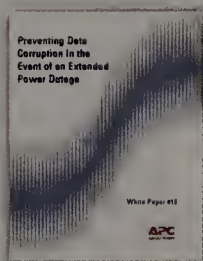
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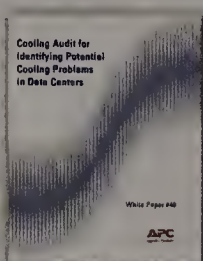
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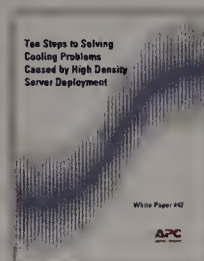
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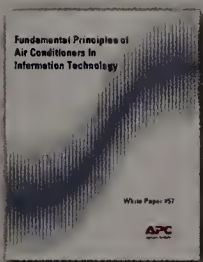
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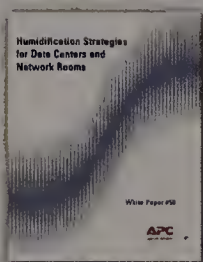
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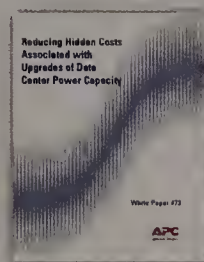
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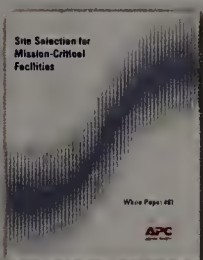
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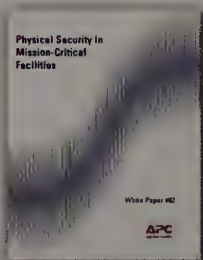
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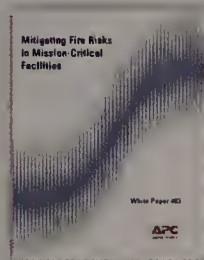
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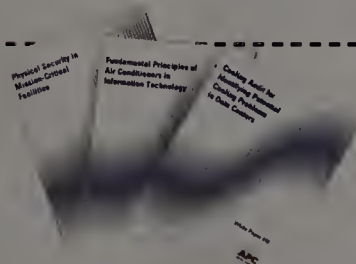
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John Leggate, CIO of BP since 1999, says the company has benefited from its IT investments and its outsourcing strategy: "We can show about a 5 percent per annum trendline over five years in savings from technology."

In sync With His CEO



For five years, **BP** CIO John Leggate has managed people and IT systems in concert with his CEO's acquisition-hungry strategy. His mantra: Integrate always, outsource often, and make technology pay—or don't make it at all.

BY SUSANNAH PATTON

A Gusher of Mergers

In August 1998, with the energy industry reeling from a sharp drop in oil prices, British Petroleum's CEO made a daring move. John P. Browne, the cigar-puffing, Cambridge-educated chief executive took over Chicago-based Amoco in a deal worth \$52 billion, turning his midsize British company into one of the world's energy giants, in a league with Royal Dutch/Shell and number-one Exxon Mobil. Browne promised that he would slash \$2 billion a year from expenses—and that half a billion would come from IT, where he saw cost-cutting opportunities from overlapping staffs and systems. The acquisition set off a wave of industry consolidation as U.S. business magazines compared Browne to General Electric's then-CEO Jack Welch.

Amoco was the first of several high-profile deals for Browne, who had taken BP's helm in 1995 after heading its exploration unit. He had watched as British Petroleum, which ranked 27th in the Global 500 in 1996, had become dependent on

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maturing fields in Alaska and the North Sea. With a limited world supply of oil and gas reserves, Browne saw little alternative to growing BP except through acquisition.

So the M&A action began. After Amoco came BP's \$26.8 billion purchase of U.S.-based Atlantic Richfield in 1999; \$4.7 billion to snap up British lubricant company Burmah Castrol in 2000; and a \$4 billion takeover of Germany's Veba Oel. In August 2003, with BP ranked fifth in the Global 500, Browne invested \$8.1 billion in Russian oil giant TNK, created during the Soviet Union's collapse.

IT has long been central to Browne's thinking—his commitment to IT outsourcing is cited in a business school case study and he's been an Intel director since 1997. But the idea that IT could enable BP's growth appeared to crystallize during this entrepreneurial surge. At Oxford University in 2001, he said: "It was only really two or three years ago that we started to see IT as a set of integrated technologies with a real business potential." Browne added that he sees IT "not just as a service function...but as an activity which

cutting costs wherever possible and, most of all, someone as daring as himself.

Enter John Leggate, fresh from a year as president of BP's Azerbaijan operations, where he had been part of a team negotiating a multi-billion-dollar pipeline deal across the Caucasus Mountains—a project that inspired the James Bond movie *The World Is Not Enough*. An engineer by training, with no specific IT experience, the ebullient Scotsman had built nuclear power plants before joining BP, and then run North Sea oil rigs. He had even revamped the company's HR department but had never implemented an ERP system or negotiated an IT outsourcing deal. Leggate, however, had built a reputation as a tough manager not afraid to cut costs and invest in technology to boost productivity. Browne admired Leggate's work in the North Sea and Azerbaijan and made him CIO in January of 1999, just as the BP-Amoco deal was closing.

So began a partnership that's lasted five years and counting. It's a relationship in which the CIO embodies the CEO's philosophy. Leggate has responded to the challenge by acting

Leggate's part, since the start of the year, he has personally assured Browne and other top managers that BP's \$1.7 billion IT budget is spent in areas that will bring maximum return.

In a profession where an average tenure is four years and nine months, Leggate's five years as BP's CIO provides lessons in managing up, in leading by example and in keeping a focus on corporate goals. For starters, it helps to be driven. Leggate, like his boss, says he likes to do things ahead of competitors. He says that BP is a first-mover because "it's in the genes," adding that "time and time again, it is shown there are no prizes for coming in second."

Drilling for Savings

BP's headquarters, a stone's throw from Buckingham Palace, faces Saint James's Square, one of London's oldest and most prestigious addresses. Dukes and earls populated the square in the early 18th century and both Gens. Eisenhower and de Gaulle made their World War II headquarters here. Inside BP's offices, however, all remnants of England's history are replaced by its ultramod-



"We think of IT as digital business—an activity which allows us to focus on the benefits that the business and technology can bring in combination."

—BP CEO John Browne

could change the nature of the business itself. We think of this area as digital business—an activity which allows us to focus on the benefits that the business and technology can bring in combination."

As Browne set his philosophy in motion, a problem came up: BP needed a new CIO.

Enter John Leggate

The CIO job at BP opened up in 1998, during the dotcom frenzy. John Cross, Browne's IT chief and a 23-year BP veteran, was leaving to join an Internet venture. Browne knew he needed a CIO with a deep knowledge of his company's philosophy, a willingness to launch a massive systems integration project while

decisively as a cost-cutter in mergers; as a risk-taker in trying out new Internet and wireless technologies; and as a pragmatist in seeking payback for those investments. All the while, Leggate, part of BP's senior leadership team, has pushed hard for top executives to consider IT's importance to BP's vision.

In action, that means that during the Amoco merger Leggate and his group—dubbed the digital business team—quickly found duplication within BP and Amoco's IT departments and slashed redundant jobs and programs (BP declines to give a specific count). The team has worked nonstop at integrating processes and systems while outsourcing dozens of key IT services. And for

ern, open floor-plan architecture. Earnest looking, nattily dressed executives scurry up and down curved stairways that lead to floors of clutter-free desks, surrounded by small, glass-paneled offices. At the top of the open stairwell lie the executive suites of Browne, who was knighted in 1998 and has since been known as Lord Browne of Madingley. A few floors below, Leggate (who recently was named a Commander of the British Empire, one step below knighthood) works at a laptop in his spare office.

Dressed in a crisp dark suit and bright blue tie, Leggate likes to talk about his interest in technology and BP's accomplishments but is self-effacing and vague when asked about his

own background. "It's not about me, it's about what my team has done," he says in his lilting Scottish accent.

This much he'll confirm: Leggate got his start in the energy field constructing nuclear power plants before joining British Petroleum in 1979. At BP, he made his name as an executive who could take on a problem and quickly produce results. "The CIO job came as a complete surprise," says Leggate. "I have a wide range of experiences, which allows me to interact with the businesses and relate to and understand their challenges not as an outsider, but as someone who's done it himself. That's a great selling point for a CIO."

Leggate was surprised to be a CIO candidate, but unbeknownst to him, his predecessor had eyed him as a possible successor. When John Cross left BP in 1998 to form his own Internet consultancy, the company considered a broad search. Cross remembered Leggate's interest in technology and says he was particularly struck by Leggate's work running an aging North Sea oil field. Leggate needed to slash costs, but instead of cutting across the board, he decided to boost spending in technology designed to help automate the drilling process. The result: a more automated oil field that continued to produce crude and revenue. "John was always proactive in deploying technology," Cross says. When asked about his IT investments while working on oil and gas fields, Leggate says, "I used to bet on technology even in a down market."

Cross proposed Leggate's name to Browne, who approved it over the objections of a couple of managers who balked at losing one of their top executives. On a trip back to London from Azerbaijan, Leggate met with Browne and accepted the CIO job just as the company was starting the Amoco merger. "I have a good track record of bringing things together," Leggate says, theorizing on why he was chosen for the job. "I'm good at driving base costs, finding value and making the whole thing work." To the point: BP was using 10,000 software applications across the company when he became CIO. Within a year, they had scrapped 3,000 and hired outside contractors to manage another 5,000.

BP Vital Statistics

Headquarters: London

History: Anglo-Persian Oil was formed in 1909 by English adventurer William D'Arcy and Burmah Oil, and was the first company to strike oil in the Middle East. The British government took a 51 percent stake in 1914. In the United States, Amoco emerged from Standard Oil Trust, organized by John D. Rockefeller in 1882. Anglo-Persian took the name British Petroleum in 1954. The English company merged with Amoco in 1998, forming BP Amoco, creating a new oil giant that agreed the next year to buy U.S.-based Atlantic Richfield. Known as BP since 2000.

Sales in 2003: \$236 billion

Employees: 100,000 in more than 100 countries

IT spending: \$1.7 billion per year

Drilling the BP Way into Amoco

As Leggate stepped in as CIO in January 1999, he faced the overwhelming challenge of integrating conservative, Chicago-based Amoco's massive IT operations into BP, which had been on an outsourcing binge since the early 1990s and had already consolidated dozens of data centers and outsourced much of its help desk and application support work. By contrast, Amoco built systems in-house, and IT staffers feared losing their jobs. Leggate began working with Phiroz P. Darukhanavala, then vice president for IT merger integration and soon to become the company's CTO and the hands-on leader of the integration efforts, and set out to identify overlaps in the IT departments. Leggate and Darukhanavala (known as "Daru") say they learned from the Amoco merger the importance of spelling out the "rules of engagement" to designate who will create the integration plan. In the Amoco case, BP ultimately stepped in and imposed its will on Amoco, standardizing desktops on a BP operating environment and scrapping much of Amoco's in-house IT systems, keeping only Amoco's SAP platform for U.S. operations.

"You have to make it crystal clear who is in charge when you are integrating two com-

panies' systems," says Daru, who is based in Warrenville, Ill. "There are no right or wrong answers, but you need to make a call, or you will be arguing for years."

Leggate was given 24 months to find his half-billion dollars in savings, but it took only 11. "They clearly decimated Amoco," Cross says, noting that Leggate effectively imposed BP's agenda to outsource wherever possible and trim IT staff at Amoco and subsequent acquisitions. After his early success in cutting costs, Leggate's colleagues gave him the nickname "Shiny Brain," a moniker that also refers to his immaculately shaved head.

The integration tasks remain a major concern for Leggate's team. With more than 100 ERP systems and dozens of payroll systems, BP continues to work its way through a morass of back-office integration. With merged companies, Daru says, "We always focus on getting employees connected first so that from day one people can communicate with anyone in the company with merged networks and e-mail. But in all these mergers, the back-office stuff was untidy. It will be a matter of years before it is all cleaned up."

Today, BP is working to consolidate more than 400 data centers and server farms around the world, with plans to reduce the number to "a handful" in the coming few years.

The emphasis on outsourcing is by design. Leggate is pursuing BP's pioneering strategy, which dates to the early 1990s when Browne and Cross sought a competitive advantage through efficient ways of buying IT services. BP still outsources on a large scale, with everything from telecoms, application development, data centers and help desk provided by vendors. The company took the model further in 1999 when it outsourced HR back-office processes to the Internet company Exult in a \$600 million deal that transferred most U.S. and U.K. HR services to a Web portal.

When the strategy began, outsourcing drastically cut BP's IT budget and headcount. In BP's exploration unit (then led by Browne), outsourcing drove an IT budget drop from \$360 million in 1989 to \$132 million in 1995.

Now, Leggate says, the company has moderated the pace of outsourcing. Both Daru and

Leggate say BP has learned to limit outsourcing contracts to three years and to avoid forcing alliances between outside vendors. In November 1999, BP made a \$650 million bet to outsource telecom services to WorldCom, before its 2002 accounting fraud scandal was exposed. "Instability in that market has caused us to diversify our buying portfolio, to spread our risk," Leggate says.

Daru, who calls himself Leggate's right-hand-person and quiet adviser, notes that the company is gradually reducing the number of ERP systems and is moving away from best-of-breed packages toward more integrated suites for HR, accounting, retail and other back-office systems. "We're not integrating for the heck of it," Daru says, adding that a clear payback drives integration efforts. Daru calls Leggate a fast learner and considers part of his job to cultivate ties to the IT vendor world while Leggate maintains the critical link to the BP executive suite.

Digital Boom and Bust

Once done with the initial budget slashing from the BP-Amoco merger, Leggate set out to invest heavily in Internet technology. With Browne's backing, he spent \$250 million in 2000 on initiatives to get BP employees onto a common operating environment. He bought Internet-linked laptops for more than half of the company's employees, including top management and oil rig workers. Now, 80 percent of the company's 100,000 employees have computers, 2,000 of which are "living beyond the firewall" in an experiment with broadband wireless connections that puts them ahead of competitors Shell and Exxon Mobil. "One of my main jobs is to allow people here to be connected wherever you may touch down. If you're in Jakarta, Singapore or Houston, you're always in touch with your colleagues," Leggate says.

Leggate and Browne's early enthusiasm for all things Internet-related reflects the first-mover company ethos also evident in BP's acquisition and outsourcing strategies. Sometimes, they admit, they have gone too far.

Both Leggate and Browne bet aggressively (and some would say unwisely) on online pro-



Lessons from John Leggate

- » **Know** your CEO's strategy and priorities.
- » **Make sure** IT strategy reflects your company's corporate philosophy.
- » **Take advantage** of any non-IT business experience you have had to better communicate IT needs with business executives.
- » **Outsource aggressively**, but don't sign lengthy contracts, and work to keep control of key strategy and core intellectual property.
- » **Don't force** alliances between outside vendors.
- » **Don't lose** enthusiasm for new technologies even if burned in the past.
- » **Choose** your CTO carefully and develop a close relationship.
- » After a merger, **focus on** integrating the front end so that employees can effectively communicate on day one.
- » When integrating two companies' systems, **make sure** it's clear who is in charge.

curement, predicting large and quick gains in the business-to-business area. In 1999, Browne predicted with fanfare that BP would move 95 percent of its \$25 billion in procurement to the Web by the beginning of 2001. When the company was able to achieve only 4 percent of purchasing online by that year, Browne said in a speech delivered at Oxford University (and cowritten by Leggate): "To have reached that sort of level would have required not just closely linked internal systems but also well-developed portals and a network of suppliers linked into a single process. Revolutions don't come easily."

In retrospect, Leggate says now that while the expectations were overblown, the vision remains. "Clearly, digitizing the supply chain

in all its facets will be a long journey, but the dream—in a business context—has the touch and feel of an Amazon.com," he says. He adds that BP will remain a first-mover where they see a clear payback. "Technological breakthroughs like Web services and RFID tagging, all of these will accelerate the drive toward digitization of the supply chain," he says.

Cross, himself afloat in the dotcom bubble at the time, says that BP's enthusiasm may have cost them. "They did play with tangential things, especially in B2B, and they surely lost a lot of money on that, as did everyone else," he says. Leggate, who embraced the Internet more enthusiastically and publicly than other oil industry CIOs, still proclaims that BP's goal is to "live on the Web." It sounds a bit dated as a motto, but Leggate (echoing Browne) stresses the Internet never changed the laws of economics or the nitty-gritty nature of finding oil and gas. Leggate says: "Are we getting more for less now? That answer is yes. We can genuinely show about a 5 percent per annum trendline over five years in savings from technology."

A Business-IT Pipeline

According to Jill Feblowitz, an analyst at AMR Research, all of the oil giants are "on the same page" wrestling with ERP consolidation and pouring dollars into "digital oil field" initiatives that promise increased oil production through 3-D imaging and real-time, automated drilling techniques. "Everyone is focused on creating more flexibility with these initiatives because of the heightened uncertainties in the Middle East and other regions," Feblowitz says. The challenge for CIOs at the oil giants, says Dick Cooper, director of Deloitte Consulting's global oil and gas practice, "is to marry these new technologies with cost and budget information."

Analysts characterize BP's technology strategy as aggressive, but they also agree that when it comes to aligning IT and business strategy, BP seems to be further along than its rivals. That task has been made easier by Browne's interest in IT and Leggate's business

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experience. "What was unusual about John Browne was that here's a CEO that not only thought IT mattered but made it clear by his actions," says Michael Earl, dean of Templeton College at Oxford University and an expert on the CIO role and on CEOs who have pushed an IT agenda. Earl adds that Cross set the stage for Leggate by working closely with Browne and getting top-level approval for his bold decision to outsource much of IT in the 1990s.

The origin of BP's aggressive style lies in a management structure that is less hierarchical than its competitors. Once a rigid, state-owned company, BP's structure shifted dramatically after the British government sold its final 30 percent share in 1987. When new management took over in 1992, the company was split up into 150 business units with managers' pay linked to their unit's profits. Now, ambitious managers like Leggate must demonstrate a business case for each investment. Leggate describes his task of assuring top management that money is wisely spent on IT projects as a "restraint model" that involves both challenges by outside experts and a robust debate within the senior leadership team.

Even after the disappointment of the Internet bust, Leggate retains a hard-to-restrain glee when talking about technology's promise. (Cross, who is in regular touch with Leggate, says the CIO's enthusiasm helps him sell BP executives on the importance of IT.)

For a presentation on radio frequency ID tags to Browne and 40 other executives, Leggate invited colleagues from Procter & Gamble and the brewer Scottish Courage to talk about how they had used RFID to verify the



CTO Phiroz P. Darukhanavala ("Daru") led BP's integration with Amoco and says it will be years before legacy back-office systems are cleaned up.

age and freshness of a product and to track pallets and crates. "Our people went away really enthused," Leggate says of the meeting. "We decided to harness that energy level and launch four major projects." BP is implementing sensory networks using RFID chips for applications such as tracking rail cars in the chemical business. "It's important to see, and to show, whether there is a business case, as opposed to just chasing a technical dream," Leggate says.

Exploring for Value

In August 2003, Browne made BP the first Western oil company to buy a major equity piece of an integrated Russian oil and gas company, giving BP a 50 percent share in a venture dubbed TNK-BP. Two months later, the arrest of Mikhail Khodorkovsky, president of Yukos, the country's largest oil company, roiled the Russian financial markets. Browne voices confidence in the investment, but analysts say the jury is still out.

Risk, however, is integral to BP's strategy. To Leggate, the culture of risk-taking means that projects such as those using RFID are adopted quickly and wholeheartedly if they can help the bottom line. New deals like the one with Russia's TNK mean the integration

challenges will continue. Leggate prefers to delegate systems integration details to Daru's team and focus on strategy and cost controls.

Leggate's team is moving away from proprietary systems toward commodity computing and open-source architectures. The group is looking at using a new class of software that will allow far-flung employees to access applications over the Internet and to download only the piece of an enterprise program they need. According to Daru, this type of software-on-demand would involve SAP and some other types of applications but is still in experimental, although promising, stages.

From the outside, BP appears to have embraced risk more than its rivals by doubling in size, venturing into unstable regions or diving headfirst into the Internet and other technologies. And many of the risks seem to have paid off. For example, the Amoco buy turned BP into a major supplier of natural gas, which has tripled in price since 1998. Soon after, Exxon bought Mobil and Chevron took over Texaco. Today, BP vies with Royal Dutch/Shell for the title of second largest integrated oil company after Exxon Mobil.

At BP's London offices, however, recklessness seems a foreign concept. "Our natural bias for innovation has to be handled carefully so that we always find the business point," Leggate says. He adds later that BP "undertakes a high and rigorous degree of analysis and testing before it places its bets." Although Leggate relishes discussing BP's philosophy, the CIO post at Britain's largest company can be a lonely one, Leggate has told Cross. "It's dangerous territory because, like a CEO, you are always getting shot at," Cross says. "John is an ebullient character, though. He's like a big rubber ball that can take the knocks and keep bouncing along." **CIO**

Susannah Patton is a freelance writer based in Paris. Send comments to letters@cio.com.

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SOMETHING VENTURED, SOMETHING GAINED

CIOs and venture capitalists are back together. VCs are eager for CIOs' insights on startups. CIOs get access to and influence over the latest technology.

BY KIM GIRARD

Roger Sippl is a veteran Silicon Valley entrepreneur and executive, well known as a founder of CRM software company Vantive and database pioneer Informix. But that was then; now venture capitalists want to know the prospects of Sippl's latest startup, a Web services company called Above All Software. To find out, VC group J.P. Morgan Partners turned to its Technology Council, a group of 20-plus CIOs and CTOs who gathered in Las Vegas last November.

What started as a product pitch turned into a reality check. The Technology Council members weren't shy about letting Sippl know he is ahead of their Web services adoption curve. "We're still dipping our toes in the water," says Enzo Micali, CTO of 1-800-Flowers.com, who was one of the few IT execs present who agreed to give the technology a try.

Tough love, perhaps, but this is the kind of insight from IT leaders that startup companies and their venture capitalist backers crave. Stung by the failure of so many startups after the technology bubble burst, these days VC firms like J.P. Morgan

Reader ROI

- ▶ Why venture capitalists rely on IT executives
- ▶ What's in it for CIOs
- ▶ How CIOs can avoid conflicts of interest



JOSH LEVINE
CTO, E-Trade

Venture capitalist-sponsored CIO councils are "a forum where there's no pressure."



WILL JOHNSON
VC, J.P. Morgan Partners

"We spend enough time with our CIOs to understand to a pretty strong degree what's important to them."



BUCK FRENCH
VC, J.P. Morgan Partners

"The CIOs were saying, 'I don't know if the TCO for Linux is there.' A year later, a bunch of CIOs are adopting Linux."



ENZO MICALI
CTO, 1-800-Flowers.com

"I don't want to reinvent the wheel every time we acquire a company."

Partners are relying on CIO advisory groups. The Technology Council guides J.P. Morgan Partners (JPMP) on technology and provides straight talk on whether a portfolio company is selling goods that IT execs want to buy.

In exchange for their wisdom, CIOs get a first peek at new technologies and, if they choose, a chance to work with a startup and shape the future features of its product. "It's almost like having your own R&D arm," says Lars Rabbe, CIO of Yahoo. "You get all these startup companies so you don't have to do it yourself."

Besides the insight into new technologies, CIOs who participate in VC-sponsored councils say the chance to connect with their peers is a huge benefit. A CIO thinking of participating in such groups must be careful to avoid conflicts of interest, however, and should make sure that the VC firm knows the CIO's needs well enough so that it doesn't waste his time on irrelevant technologies.

HOW CIO COUNCILS WORK

The specifics of VC-CIO relationships vary quite a bit. There are about 700 venture capital outfits in the United States, ranging from firms that seed-fund new ventures to later-stage investors willing to gamble a lot of money on a company with a product. Though the National Venture Capital Association and other organizations that track the industry can't pinpoint the number of VC-organized CIO councils, dozens of firms are quietly using the groups as a crucial part of their investment strategy.

Larger firms such as JPMP and New Enterprise Associates gather their CIO groups once or twice a year in person and more often by telephone. Clearstone Venture Partners, which runs a midsize fund, prefers a more loosely knit CIO group with fewer members and roundtable-style get-togethers. A few venture firms hire CIOs to provide in-house expertise or invest in CIO groups. For example, Rabbe was an executive-in-residence at Clearstone for seven months before taking a job as CIO at Yahoo. Mobius Venture Capital

Due Diligence for VC Groups

Four criteria for joining a VC-sponsored CIO council

CIOs who have been invited by a venture capitalist to join a CIO council should first do some sleuthing. Here are some questions to consider before starting a work relationship with a VC.

1 Does it have stellar references?

Call around and ask a few CEOs or other CIOs which VC firms they have worked with and how that worked out.

2 Is the firm successful?

Check its long-term record. Dotcom success was fleeting. You want to know that this company can do more than execute an IPO strategy.

3 How do the partners come across?

Follow your instincts. Do they seem humble or arrogant? Do they speak poorly about their competition? Would you buy a used car from them?

4 How big is its current fund?

Will it be able to keep the startup you are eyeing in business until it's ready to go public? If the company goes belly-up, so does support for the product. —K.G.

invested in the Feld Group, a consultancy comprising former CIOs who helped revamp the IT departments of Fortune 500 companies such as Delta Air Lines and PepsiCo. The Feld Group, which is now owned by tech-services giant EDS, helped give Mobius "visibility into the world of CIOs," says Bill Burnham, a former managing director at Mobius.

J.P. Morgan Partners, a private equity firm with a whopping \$19 billion in assets under management, held its first Technology Council meeting in January 2003. Since then, the group has grown to 24 CIO members, who collectively represent \$6 billion in technology spending. Two-thirds of the CIOs on the

council—including those of Domino's Pizza, 1-800-Flowers.com, Guitar Center and House of Blues—come from JPMP's portfolio companies. (The firm invests in small to mid-size companies.) One-third of the council members are "outsider" CIOs, including those from E-Trade, Otis Elevator, Price-line.com and the Vanguard Group.

Council members often hail from former JPMP portfolio companies, such as Kinko's (which was acquired in February by FedEx). Sometimes they have personal relationships with council organizers. Vanguard Group Managing Director of IT Tim Buckley, for example, was a Harvard Business School classmate of JPMP partner Buck French. They are invited on the council to give it more depth and provide an independent perspective.

Initially, the Technology Council was slated to meet in person once a year. But technology changes too quickly to wait that long—particularly if his company wants to stay ahead of investment trends, says French, an entrepreneur-turned-VC who was the group's founding father. "We had a conference call about Linux [last year] and the CIOs were saying, 'I don't know if the TCO for Linux is there,'" he says. "A year later, a bunch of CIOs are adopting Linux." To keep up with technological change, Will Johnson, who chairs the council, bumped up the meeting schedule to twice yearly and added monthly teleconferences.

VCs view the CIO councils as crucial screeners of new technology, warding them off of costly investment boondoggles. Carl Showalter, a general partner at Lightspeed Venture Partners, says CIOs help him separate startups that he calls "vitamins"—companies with technology he considers more of an add-on feature than a problem-solver—from those that are true pain-relieving "aspirin." VCs are more interested in the latter because it takes them four or five years, on average, to make money from selling a startup or taking it public. The last thing a VC wants is to fund a company with a me-too technology or a product that quickly becomes obsolete.

Enthusiastic approval from CIOs can mean the difference between a startup nailing a \$10 million funding round or disappearing.

Evangelos Simoudis, a partner at Apax Partners who coordinates his company's 25-member CIO advisory group meetings, says that Apax's investments in several startups—such as Bristol Technology, a developer of transaction monitoring software—were influenced by council CIOs from companies such as Bristol-Myers Squibb and Hartford Insurance. “Do these [CIOs] become customers?” Simoudis asks. “Yes.”

WHAT'S IN IT FOR CIOs

During Technology Council meetings, JPMP introduces the assembled CIOs to technology startups it helps fund, both to get feedback and to give the CIOs a chance to follow up if their interest is piqued. Johnson says he won't waste the CIOs' time with a pitch that doesn't offer something of value. “We've earned the trust of these [CIOs],” he says. “Our filter is very high. We spend enough time with them to understand to a pretty strong degree what's important to them.” For now, JPMP is eyeing investments in security, Web services, wireless computing, supply chain management and networking.

No matter how much work the venture partners put into screening the companies that appear before CIO councils, however, it's ultimately up to IT execs to decide whether to purchase new technologies. Many CIOs are conservative, particularly in the aftermath of the dotcom bubble. Others find startups—particularly embryonic companies—a risky proposition.

At 1-800-Flowers.com, Micali wanted to find an easier way to manage data from the

company's many product lines. The company sells plants, gift baskets, toys and many other items online, in company-owned or franchised stores and through catalogs. Micali is hoping the Web services software from Above All (which is backed by JPMP and other VC groups) will help integrate orders that come in through call centers—not only within 1-800-Flowers.com but also from its acquired

brands such as HearthSong and the Popcorn Factory. Micali also wants to be better prepared to tackle integration challenges that crop up during future acquisitions. “I don't want to reinvent the wheel every time we acquire a company,” he says.

Louis Gasparini, senior vice president of Internet systems development for Wells Fargo, sits on a CIO council organized by Outlook



E-Trade CTO JOSH LEVINE, who participates in a few VC-sponsored CIO councils, says they are among the few venues where he can have relaxed and real communication with his peers.

“CIOs are pretty open about sharing their challenges. We're all cautious about the competitive strategies of our companies, but there's an enormous willingness to share issues and be candid.”

—DOUG BUSCH, CIO, INTEL



ENZO MICALI, CTO of 1-800-Flowers.com, got access to new Web services integration software and an introduction to Linux for data centers through the J.P. Morgan Partners' Technology Council.

Ventures and works regularly with several other VC firms. He turns to startup companies when large technology vendors don't have what he needs to solve problems, such as removing bugs during software development, improving network performance or service levels or tracking Java development. "What are we supposed to do, build it ourselves?" he asks rhetorically.

Today, Gasparini is working with, among other startup companies, Euclid, which sells software that tracks network downtime, among other features. The relationship with Euclid succeeds for several reasons. First, Euclid's technology is unique, Gasparini says. Plus, "if Euclid goes down, it's not going to get Wells into the paper," he says. Finally, he says

there's no way the bank would have received from a large company the special attention, training and time that Euclid spent with his staff. "When you work with startups, you work with the founder, who transfers knowledge to our staff," he says.

CIOs who take part in the VC councils say the gatherings are a surprisingly candid forum for airing problems, mulling over new technology and discussing management issues such as employee retention. "There are only certain people you can share with," says Micali. Adds E-Trade CTO Josh Levine, who sits on a few VC councils, "It's a forum where there's no pressure, and you really get a chance to have real communication between your peers."

It was Levine rather than a venture capi-

talist who turned Micali on to Linux. At the JPMP Technology Council meeting last November, Micali chatted about the pros and cons of the open-source operating system with Levine, who has become something of an expert on Linux from his experience deploying it in his data center. Intrigued by the idea of using it in his own data center, Micali and three staff members later visited E-Trade's headquarters in Manhattan to huddle with Levine and his crew. "He got me pretty juiced about Linux," Micali says. "Based on those discussions, it is something I am now taking a hard look at."

WISE COUNSEL FOR CIO COUNCILS

The VC-CIO link became notorious for the wrong reasons in the late '90s, when reports

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CIO Partnerships

surfaced that some IT executives received stock or stock options, free or deeply discounted products, and other perks from startup companies they purchased from. In the current ethical and regulatory environment that's placing greater scrutiny on financial moves of all corporate executives, however, even a whiff of impropriety can be damaging.

New Enterprise Associates (NEA) partner Harry Weller says selling isn't an issue during his group's council meetings because the com-

pany doesn't use that time to trot out its portfolio companies to CIOs. "We generally keep the discussion at a higher level than that," Weller says. "We don't do an NEA companies pageant."

There are no fees to join VC-sponsored CIO councils. Membership in JPMP's Technology Council is purely voluntary, French says. Like other VC firms, JPMP covers costs related to CIO group meetings, but the CIOs pay their own travel expenses.

It's up to the CIOs themselves to decide how much information they share about their companies at meetings—especially if they end

about a deal, he gets an opinion on it from the company's legal department.

VC-sponsored CIO council effectively, "you really have to understand their business," says Russell, who says he has run CIO councils in the past and plans to start one up again.

Not all CIOs are convinced of the usefulness of VC-sponsored CIO councils. "It's too early to tell how successful the [JPMP Technology Council] will be," says Mark Laughlin, CIO of Guitar Center. "I'm not quite sure if they can provide the information and networking or the exchange of information or

"It's too early to tell how successful the Technology Council will be. I'm not quite sure if they can provide the information and networking that will make our time valuable."

—MARK LAUGHLIN, CIO, GUITAR CENTER

up sitting next to a rival, which can happen on some of the councils. But Intel CIO Doug Busch, who sits on several advisory councils, says, "CIOs are pretty open about sharing their challenges. We're all cautious about the competitive strategies of our companies, but there's an enormous willingness to share issues and be candid."

Busch says that for CIO councils to work well, the VCs need to be willing to spend the time to get to know CIOs and their companies. At big corporations, IT can be a byzantine maze. Busch says that oftentimes VCs and startup companies alike don't quite understand how Intel operates, which prevents them from effectively forging the right relationships and getting their technology in front of the right people. As a result, all sides lose.

Scott Russell, a partner at Diamondhead Ventures, says he understands the importance of speaking CIOs' language—perhaps because he was a worldwide technology manager before he became a VC. "A lot of VCs talk to CIOs, but if you don't have an appreciation for their job, it's sometimes a hard conversation," he says. "Most VCs throw a new company over and say, 'Why don't you take a look at this?' But the CIOs get swamped." To use a

workgroups that will make our time valuable." What does Laughlin want? To talk with the "best and brightest" about things that matter to him: vendor consolidation, the economy and Sarbanes-Oxley, which he believes creates a big problem for CIOs. Laughlin, who holds an MBA and an accounting degree, is more interested in solving the business problems related to his job than finding the latest whiz-bang technology. "I don't have time to mess around," he says. "I want to get value for my time invested."

Nonetheless, Laughlin has thawed to the occasional VC vendor pitch. J.P. Morgan Partners has a stake in a company named ProfitLogic, which helps retailers optimize product pricing. Laughlin thinks the technology could help Guitar Center do a better job of analyzing profit margins, pricing and modeling so that the company's stores can better manage stock and lead times on orders.

Laughlin met with ProfitLogic in January. For J.P. Morgan Partners, it's another potential match accomplished. **CIO**

Kim Girard (kimgirard@sbcglobal.net) is a freelance writer based in San Francisco. Send your comments on this topic to letters@cio.com.

Kim Girard (kimgirard@sbcglobal.net) is a freelance writer based in San Francisco. Send your comments on this topic to letters@cio.com.

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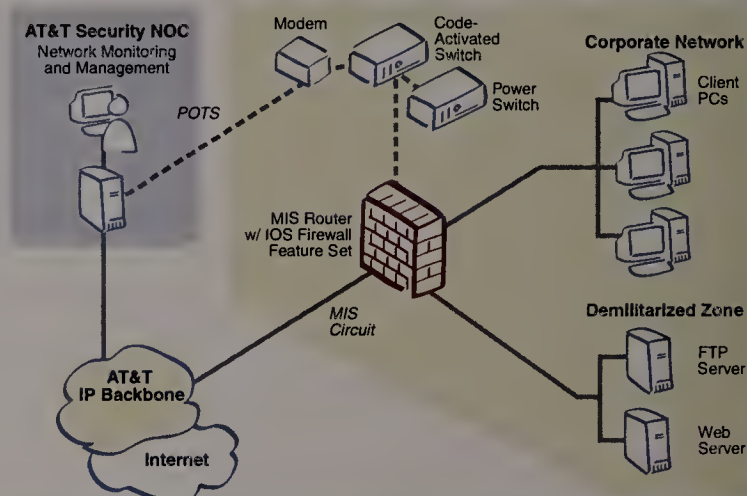
AT&T's security solutions do a number on hackers, viruses and intrusions so they don't do one on you

AT&T delivers a powerful suite of integrated security solutions that can assess vulnerabilities, protect against unauthorized access, proactively detect attacks, and rapidly respond to suspicious activities or events. It's like a virtual security guard to help protect your network from unwanted intruders.

AT&T's Network Security Portfolio offers a broad array of services that include:

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And coupled with AT&T's professional networking expertise in the area of ethical hacking, policy development and assessment services for a secure solution.



WHAT THE INDUSTRY IS SAYING:

- AT&T [Managed Security Services] was awarded the Customer Solutions Excellence Award – “For implementing extremely flexible management offerings, being the first to bring application security services to the market, and offering the widest array of services in the industry, AT&T [Managed Security Services] is awarded the Customer Solutions Excellence Award.” – Frost & Sullivan, July 2003

For more information, contact your AT&T Representative, or visit www.att.com/networking.



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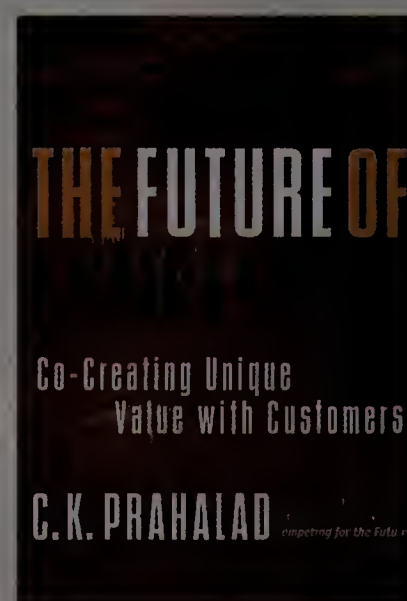
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HOW TO PUT YOUR CUSTOMERS TO WORK

It's getting harder for companies to sustain growth and create value on their own. It's time to loop customers into the act.

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Managers are under intense pressure to create value. But value creation by improving operational efficiency—through such initiatives as outsourcing, business process reengineering and workforce reduction—has limits in terms of morale and potential. Companies must couple such efficiencies with innovation and new business development. Internally generated profitable growth is at a premium. Even the best companies have struggled to create new markets or sustain a high rate of commercially successful innovations. C.K. Prahalad, professor of business administration, and Venkat Ramaswamy, professor of marketing, both at the Michigan Business School, contend in their new book, *The Future of Competition*, that companies need not (and should not) go it alone when trying to create value. Their research suggests an emerging economic model of value cocreation, in which consumers and companies routinely collaborate to create value that, to a large extent, is personalized to the individual. This excerpt explains that concept.

Variety Does Not Equal Value

A profound (but silent) transformation of our society is afoot. Our industrial system is generating more goods and services than at any point in history, delivered through an ever-growing number of channels. Superstores, boutiques, online retailers and discount stores proliferate, offering thousands of distinct products and services. This product variety is overwhelming to consumers. Am I buying the right digital camera? Am I getting the best treatment for my chronic ulcer? Am I signing up for the right service? Simultane-

ously, thanks to the propagation of cell phones, websites and media channels, consumers have increased access to more information, at greater speed and lower cost, than ever before. But who has the leisure and the proficiency needed to sort through and evaluate all these products and services? The burgeoning complexity of offerings, as well as the associated risks and rewards, confound and frustrate most time-starved consumers. Product variety has not necessarily resulted in better consumer experiences.

For senior management, the situation is no better. Advances in digitization, biotechnology and smart materials are increasing opportunities to create fundamentally new products and services and transform businesses. Major discontinuities in the competitive landscape—ubiquitous connectivity, globalization, industry deregulation and technology convergence—are blurring industry boundaries and product definitions. These discontinuities are releasing worldwide flows of information, capital, products and ideas, allowing nontraditional competitors to upend the status quo. At the same time, competition is intensifying and profit margins are shrinking. Managers can no longer focus solely on costs, product and process quality, speed, and efficiency. For profitable growth, managers must also strive for new sources of innovation and creativity.

Thus, the paradox of the 21st-century economy: Consumers have more choices that yield less satisfaction. Top management has more strategic options that yield less value. Are we on the cusp of a new industrial system with traits different from those we take for granted?

The emerging reality forces us to reexamine the traditional system of company-centric value creation that has served us so well over the past 100 years. We now need a new frame of reference for value creation. The answer, we believe, lies in a different premise centered on cocreation of value. It begins with the changing role of the consumer in the industrial system.

The Power of the Connected Consumer

The most basic change has been a shift in the role of the consumer—from isolated to connected, from unaware to informed, from passive to active. The impact of the connected, informed and active consumer is manifest in many ways. Let us examine some of them.

Information Access With access to unprecedented amounts of information, knowledgeable consumers can make more informed decisions. For companies accustomed to restricting the flow of information to consumers, this shift is radical. Millions of networked consumers are now collectively

Reader ROI

- ▶ A new framework for creating value for a company
- ▶ Why consumers are now active cocreators of value
- ▶ How managers should respond to the value paradigm shift

challenging the traditions of industries as varied as entertainment, financial services and health care.

For instance, active health-care consumers (no longer the passive recipients of treatment, a.k.a. patients) are using the Internet to learn about diseases and treatments; the track records of doctors, hospitals and clinics; and the latest clinical drug trials and experimental procedures—and to share their personal experiences with others. Consumers can now question their physicians more aggressively and participate more fully in their own treatment modalities.

Global View Consumers can also access information on businesses, products, technologies, performance, prices and consumer

actions and reactions from around the world. Twenty years ago, the two car dealerships (General Motors and Ford) in small towns in North America would probably have influenced the driving aspirations of a local teenager. Today, a teen anywhere can dream about owning one of more than 700 car models listed on the Internet, creating a serious gap between what is immediately available in the neighborhood and what is most desirable.

Geographical limits on information still exist, but they are eroding fast, changing the rules of business competition. For example, broader consumer scrutiny of product range, price and performance across geographic borders is limiting multinational companies' freedom to vary the price or quality of products from one location to another.

Networking Human beings have a natural desire to coalesce around common interests, needs and experiences. The explosion of the Internet and advances in messaging and telephony—the number of mobile phone users is already over one billion—is fueling this desire, creating an unparalleled ease and openness of communication among consumers. Consequently, “thematic consumer communities,” in which individuals share ideas and feelings without regard for geographic or social barriers, are revolutionizing emerging markets and transforming established ones.

The power of consumer communities comes from their independence from the company. In the pharmaceutical industry, for instance, word of mouth about actual consumer experiences with a drug, and not its claimed benefits, is increasingly affecting patient demands. Thus, consumer networking inverts the traditional top-down pattern of marketing communications.

Experimentation Consumers can also use the Internet to experiment with and develop products, especially digital ones. Consider MP3, the compression standard for encoding digital audio developed by a student, Karlheinz Brandenburg, and released to the public by the Fraunhofer Institute in Germany. Once technology-savvy consumers began experimenting with MP3, a veritable audio-file-

sharing movement surged to challenge the music industry. The collective genius of software users the world over has similarly enabled the codevelopment of such popular products as the Apache Web server software and the Linux operating system.

Of course, the Internet facilitates consumer sharing in nondigital spheres as well: Aspiring chefs swap recipes, gardening enthusiasts share tips on growing organic vegetables, and homeowners share insights into home improve-

The most basic change has been a shift in the role of the consumer—from isolated to connected, from unaware to informed, from passive to active.

ments. More crucial, consumer networks allow proxy experimentation—that is, learning from the experiences of others. The diversity of informed consumers around the world creates a wide base of skills, sophistication and interests that any individual can tap into.

Activism As people learn, they can better discriminate when making choices; and, as they network, they embolden each other to act and speak out. Consumers increasingly provide unsolicited feedback to companies and to each other. Already, hundreds of websites are perpetuating consumer activism, many targeting specific companies and brands. America Online's AOL Watch, for example, posts complaints from former and

current AOL customers. Blogs (Web logs), which present an individual's worldview through texts, images and Web links, facilitate public expression and debate.

The Web has also become a powerful tool by which groups focused on issues such as child labor and environmental protection seek corporate and governmental attention and promote reforms. Consumer advocacy through online groups may have an even greater impact than company marketing. When Novartis AG launched clinical trials of a promising leukemia drug, Gleevec, word spread so fast on the Internet that the company was inundated by demand from patients wanting to participate. Activism by leukemia patients who were on the early clinical trials for this drug led to a highly effective lobbying effort via Internet support groups to speed up its production and even get the Food and Drug Administration to expedite its approval.

What is the net result of the changing role of consumers? Companies can no longer act autonomously—designing products, developing production processes, crafting marketing messages and controlling sales channels—with little or no interference from consumers. Consumers now seek to exercise their influence in every part of the business system. Armed with new tools and dissatisfied with available choices, consumers want to interact with firms and thereby cocreate value. The use of interaction as a basis for cocreation is at the crux of our emerging reality.

Consumer-Company Interactions: Smashing Assumptions

Consider the evolution of the health-care industry. Innovations in pharmaceuticals, biotechnology, nutrition, cosmetics and alternative therapies are creating various treatment modalities and transforming our concepts of health. As both consumers and technologies advance, traditional medicine (curing sickness), preventive medicine and improvements in the quality of life are rapidly merging into a “wellness space.” Let us examine the changing dynamics of interaction

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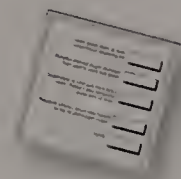
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between a consumer and the organizations that participate in the wellness space.

Twenty years ago, when I was feeling ill and visited my doctor, I might have undergone a battery of tests that would have informed my doctor's diagnosis, which he would explain to me only if he had to. He would then choose a treatment modality, prescribe some medications and schedule a follow-up examination. Health care back then was generally doctor-centric, just as commerce was company-centric. Doctors thought that they knew how to treat me, and since I wasn't a physician myself, I probably agreed. Similarly, most businesses figured that they knew how to create customer value—and most customers agreed.

Now, the health-care process is far more complex. As soon as I feel ill, I can tap into the expertise and experience of other patients and health-care professionals. I can access an abundance of information, some of it reliable, some not. I can investigate alternative treatments for any condition and develop an opinion about what might and might not work for me.

Ultimately, I can cut my own path through the wellness space, thereby constructing a personal wellness portfolio. If I'm grappling with high cholesterol, then I can include pharmaceuticals for blood pressure and cholesterol approved by the FDA, health supplements not approved by the FDA, a fitness regimen developed with an instructor and genetic screening for hereditary heart disease.

Notice that my wellness portfolio does not fit neatly into any traditional industry classification. Yes, I visit my doctor. I get tests and medications and submit the bills to my medical insurance, provided through my employer. But other services in my wellness portfolio fall outside the conventional doctor-based health care, pharmaceutical or insurance industries. My wellness space springs from my view of wellness, my biases, values, expertise, preferences, expectations, experiences and financial wherewithal. My spouse, meanwhile, can construct her own wellness portfolio.

Rather than rely solely on my doctors' expertise, I can seek experts among my peers—other health-care consumers—organized into thematic communities, such as a

high-cholesterol group. This networked knowledge encompasses not just the medical aspects pertinent to my condition but its sociology, psychology and likely impact on me, my family and the community at large.

These consumer-company interactions in the wellness space fundamentally challenge two deeply embedded, traditional business assumptions: 1. that any given company or industry can create value unilaterally; and 2. that value resides exclusively in the company's or industry's products and services. What new

Armed with new tools and dissatisfied with available choices, consumers want to interact with firms and thereby cocreate value.

concepts do we need to understand the implications of the emerging pattern of interactions between consumers and the company?

Cocreation in Action

Let us stay in the medical field and look at cardiac pacemakers, which we believe is a prototype of the emerging process of value creation. Millions of adults in the United States suffer from various cardiac maladies. Many of them could get a pacemaker that monitors and manages their heart rhythm and performance, a valuable benefit. However, a patient's comfort level would increase substantially if someone or something monitored his heart remotely and alerted him and his doctor simultaneously of

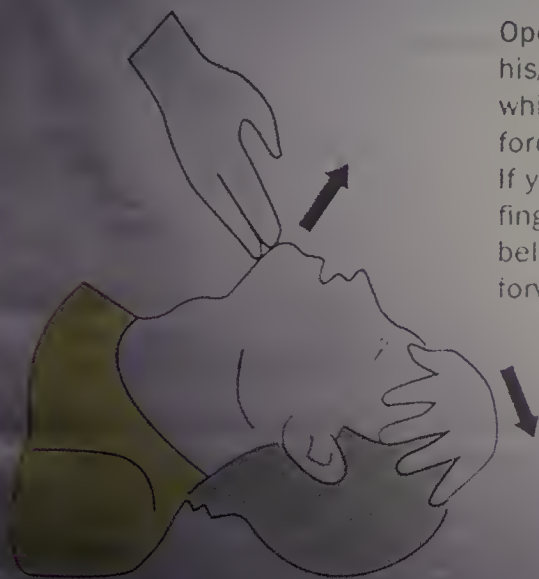
any deviations from a predetermined bandwidth of performance relevant to his condition. Doctor and patient together could decide on the remedial response.

The scenario gets more complicated when the patient travels far from home. A mere alert will not suffice. The patient needs directions to the best nearby hospital, and the attending physician needs access to the patient's medical history. How do the two doctors—the patient's primary care provider back home and the physician on call at the out-of-town hospital—coordinate their diagnosis and treatment? Should the patient call his spouse? How can the patient recognize and assess the risks and develop an approach to compliance and cooperation with these medical professionals? Are the doctors, the facilities and services, and the pacemaker all part of a network centered on the patient and his well-being?

Companies are already installing elements of these network capabilities. Consider Medtronic Inc., a world leader in cardiac rhythm management that seeks to offer lifelong solutions for patients with chronic heart disease. It has developed a system of "virtual office visits" that enables physicians to check patients' implanted cardiac devices via the Internet. With the Medtronic CareLink Monitor, the patient can collect data by holding a small antenna over his implanted device. The data is captured by the antenna, downloaded by the monitor and transmitted by a standard telephone line to the Medtronic CareLink Network. On a dedicated secure website, physicians can review patient data and patients can check on their own conditions—but no one else's—and grant access to family members or other caregivers.

Medtronic's CareLink system goes beyond the cardiac device itself and unleashes opportunities for an expanding range of value-creation activities. For example, each person's heart responds to stimulation slightly differently, and the response can change over time. In the future, doctors will be able to respond to such changes by adjusting the patient's pacemaker remotely. Furthermore, Medtronic's technology platform can support a wide range of devices and remote monitoring/diagnostic

3 OPEN THE VICTIM'S AIRWAY



Open the victim's airway by tilting his/her chin gently with one hand, while pushing back on his/her forehead with the other hand. If you suspect a neck injury, put your fingers behind the jawbone just below the ear, and push the jaw forward to open the victim's mouth.



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systems, potentially used for monitoring blood sugar readings, brain activity, blood pressure and other important physiological measures.

Now, as a manager, consider the following questions:

1. How does the patient actively participate in the process of cocreating value?

2. How does the quality of the patient's interactions with the doctor, the family and the staff of the out-of-town hospital affect the quality of the patient's overall experience?

3. What is the basis of value creation here? What role does the total network of related products, services and caregivers play in creating value? How can any one of them create unique value with the patient at any given point in time? What if the patient values the whole experience cocreated with the network, and not simply with the pacemaker?

4. How does the network's ability to accommodate different situations affect the patient experience—different time and location of the event of an irregular heartbeat? Can the same individual have a different experience with the network under different circumstances, depending on the context of the event and his personal preferences at that moment in time?

5. Can companies create an environment that generates experience variety without burdening the consumer with a variety of products and services?

The pacemaker story illustrates the new value creation space: A competitive space centered on personalized cocreation experiences developed through purposeful interactions between the consumer and a network of companies and consumer communities.

Value does not stem from the physical product (the pacemaker), or from the communications and IT network that supports the system, and not even from the social and skill network that includes doctors, hospitals, the family and the broader consumer community. Value lies in the cocreation experience of a specific patient, at a specific point in time, in a specific location, in the context of a specific event.

The cocreation experience cannot occur without a network of firms collaborating to create the environment that allows the patient to undergo that unique cocreation experience.

The network, not owned by any single firm, multiplies the value of the pacemaker to the patient, his family and his doctors. The patient, by cocreating with the network, is an active stakeholder in defining the interaction and the context of the event. The total cocreation experience with the network results in value that is more personal and unique for each individual.

To see and take advantage of these opportunities, we must suspend the traditional distinction between B2B and B2C customers. In the world of cocreation, we have to imagine every individual who interacts with the company as a "consumer," whether that individual is a forklift operator, a pilot, a design

centric view of value creation is deep-rooted, as it has been the very foundation of competition in the industrial era.

The New Frame of Reference

If the consumer and the firm cocreate value, then the cocreation experience becomes the very basis of value. This suggests new capabilities for firms. Managers must attend to the quality of cocreation experiences, not just to the quality of the firm's products and processes. Quality depends on the infrastructure for interaction between companies and consumers, oriented around the capacity to create a variety of experiences. The firm must efficiently innovate "experience environments" that enable a diversity of cocreation experiences. It must build a flexible "experience network" that allows individuals to coconstruct and personalize their experiences. Eventually, the roles of the company and the consumer converge toward a unique cocreation experience, or an "experience of one."

Notice what cocreation is not. It is neither the transfer nor outsourcing of activities to customers, nor a marginal customization of products and services. Nor is it a scripting or staging of customer events around the firm's various offerings. That kind of company-customer interaction no longer satisfies most consumers today.

The change that we are describing is far more fundamental. It involves the cocreation of value through personalized interactions that are meaningful and sensitive to a specific consumer. The cocreation experience (not the offering) is the basis of unique value for each individual. The market begins to resemble a forum organized around individuals and their cocreation experiences rather than around passive pockets of demand for the firm's offerings.

Recognizing that the traditional system is becoming obsolete, many firms are already testing new business assumptions, preparing to compete on the basis of those personalized cocreation experiences that result in value truly unique to each individual. **CIO**

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ucts and
processes.

engineer, a beautician, a clinical researcher, an instructor, a contractor, a paralegal or a civic worker. This perspective forces us to discard the artificial distinctions among enterprises and households. Furthermore, historically we have started with "B"—our business—and not the individual consumer. This company-

Share Your Opinion

Prahalad and Ramaswamy suggest that future value will come from enabling customers to participate in value creation. Do you agree? **Is that IT's future?** Scroll to the bottom of the online version of this story and **ADD A COMMENT.**

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Michael Hawley, Director of Special Projects at MIT, has accomplished many amazing things himself – named as one of the most creative individuals in America in 2001, won the Van Cliburn piano competition in 2002, did pioneering work in digital cinema at Lucasfilm, deployed technology for the 1998 American Everest Expedition, and recently published the world's largest book of photographs, BHUTAN. Hawley says, above all, he is proudest of his students, who have in turn gone on to accomplish their own amazing things. He shares insights on his own style of leadership, inspiring innovation and applying technology to benefit business and humanity.

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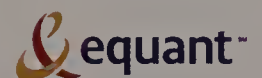
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A Cold Look at Hot Trends

All Work and No Play

Americans have stopped taking vacations. And that's bad for business. Not the travel business; their own.

BY MEGAN SANTOSUS

I'D BE THE FIRST to tell you that maternity leave—even a generous one spanning a few months—is no day at the beach.

I've had three of them, and it's an existence lived between a nap and a nap, cramming into two-hour chunks feedings, diapers and laundry. Lots of laundry. It's also 3 a.m. jaunts on the treadmill in a dual attempt to put that baby strapped to your body to sleep while shedding those excess pounds. And in your most vulnerable moments, it's regretting the fact that you put your name on the Do Not Call list, because the adult interaction afforded by telemarketers is suddenly a welcome diversion from maternal bliss.

But I will say one thing about maternity leave: It's a nice break from work, the kind of break that's increasingly rare. When you're on leave caring for a newborn, no one expects you to check in via phone or e-mail. Since the only clothing you can wear are sweats, you have another excuse for staying home. In short, you can enjoy weeks without deadlines, office politics, schedules and routines—all that stuff that equals your life on the job. And take it from someone who's been there, those unencumbered weeks offer a new and refreshing perspective



on work. For one thing, I no longer take it so seriously. Yes, boss, I remain committed to my job, and I always strive to do good work. But once I leave the office at the end of each day, whether I succeed suddenly has less bearing on my life and no impact on my ego.

In a world where (according to the Families and Work Institute) many Americans don't take all of their vacation time, and where cell phones and laptops are packed before bathing suits and sunscreen, long spells away from the office for any reason other than serious ill-health are unheard of. It's little wonder that stress rates are high and employees have a burnout rate reminiscent of a Silicon Valley dotcom. It's a vicious cycle. With recent layoffs, the remaining employees work harder. The harder they work, the more they need a break. But with layoffs in their rearview mirrors and the fear of more ahead, the less likely they are to allow themselves to take one.

ILLUSTRATION BY ARTHUR GIRON



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The Mania for Work

Needless to say, an environment that emphasizes work without play is unhealthy. And anything that's unhealthy has to be bad for business in the long run.

As founder and CEO of outplacement consultancy Challenger, Gray & Christmas, John Challenger makes it his business to stay on top of workplace trends, and he sees a real danger in our culture of endless, pervasive work. "This has happened before in the tech industry. People burn out," Challenger says. And if the number of jobs available begins to increase, burnout will lead to turnover, something few companies would welcome during a business upswing. "No company

In a nation of stressed-out workaholics, we need to shift our priorities, and be—dare I suggest it?—more like the Europeans, who down tools for weeks at a time without seeing their lives and economies fall apart.

can afford to lose its best people by running them so hard they ultimately move on to other places," Challenger says. As the economy grows, companies will need to focus much of their attention on retaining employees. "That means giving them room to breathe," he says.

It would be great if that breathing room included more than the typical few weeks of paid vacation. My recent four-month "break" was just the right amount of time I needed to decompress, to shift my mental and physical energies away from the world of work. True, I wouldn't classify my maternity leave as downtime (I read a grand total of one book for fun), but when I returned to work I felt reenergized simply because I had experienced some sustained relief from the inherent stress involved in switching between work and home. A week's vacation here and there over the course of the year doesn't provide enough time to allow your mind to leave work behind—particularly for executives who can't go to the can without taking their cell phones along (you know who you are).

A Modest Proposal

As a nation of stressed-out workaholics, we need to shift our priorities, and be—dare I suggest it?—more like the Europeans, who down tools for weeks at a time without seeing their lives and economies fall apart. We should encourage sabbaticals with some sort of stipend that allows us weeks or even months away from the office. During our officially sanctioned absences, we'd be free to travel, take cooking classes, write that crime novel or do anything as long as it has nothing to do with work.

If sabbaticals are accepted as the norm, careers won't suffer. We'd be more balanced, less harried and probably a lot more interesting as individuals.

And what's the chance that sabbaticals, or something like them, would be accepted by corporate America?

According to Challenger, it's somewhat less than zero.

He would be happy if people just started taking all the vacation time due to them. Yet even on that score, he's not optimistic. When salaries are stagnant, Challenger says, "people don't really want to spend the money to go somewhere. Sitting around at home doesn't seem all that attractive, so a lot of people just forego taking a vacation." And when salaries begin

to grow, there's another reason people find for not taking vacations: They're too stressful. "You keep checking in, your work piles up, and you have a nightmare when you get back," says Challenger.

Talk about nightmares! It's become too hard, too scary, to take a vacation. You leave the

beach; you go back to your room; you start thinking about this project or that meeting. You try to call work—and you can't get a line. Or the person who's covering for you isn't there. You try to check your e-mail, but you can't log on. And you worry. Who's covering? What's happening? Hey, you might as well be in the office. It's simpler.

Challenger has seen the consequences: Executives who never distance themselves from work, never have the opportunity to recharge their batteries.

Why not just reserve your spot in the cardiac care unit now?

For employees to feel entitled to take all their vacation time, managers and executives have to set an example. The boss should use up his vacation time every year. Leave contact info behind, but make sure people understand that it's to be used only in an emergency.

Right. Again, the prospects for that happening seem dim. If the boss can leave and cut the tether for two or three or even four weeks, the twisted message, the message he fears, may be that he's not needed.

The proper message, of course, is that he's done a terrific job preparing his reports to take over.

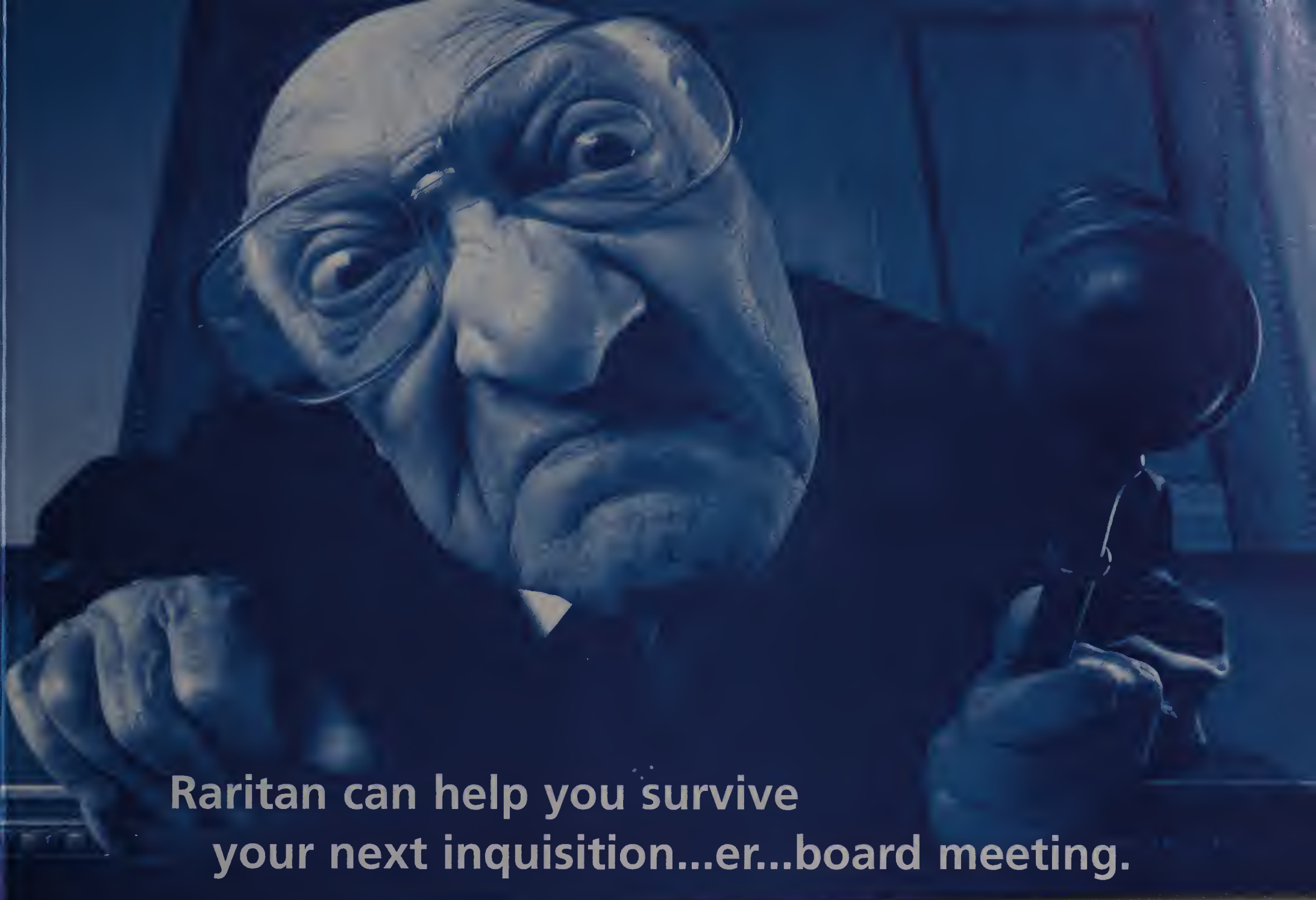
Oh, well. In about a year or so, I'll be ready for another break, and it looks like I'll have only one way to do that.

Oh, honey? **CIO**

Opinion and Knowledge Management Editor Megan Santosus can be reached at santosus@cio.com.



PHOTO BY LESLIE FEAGLEY



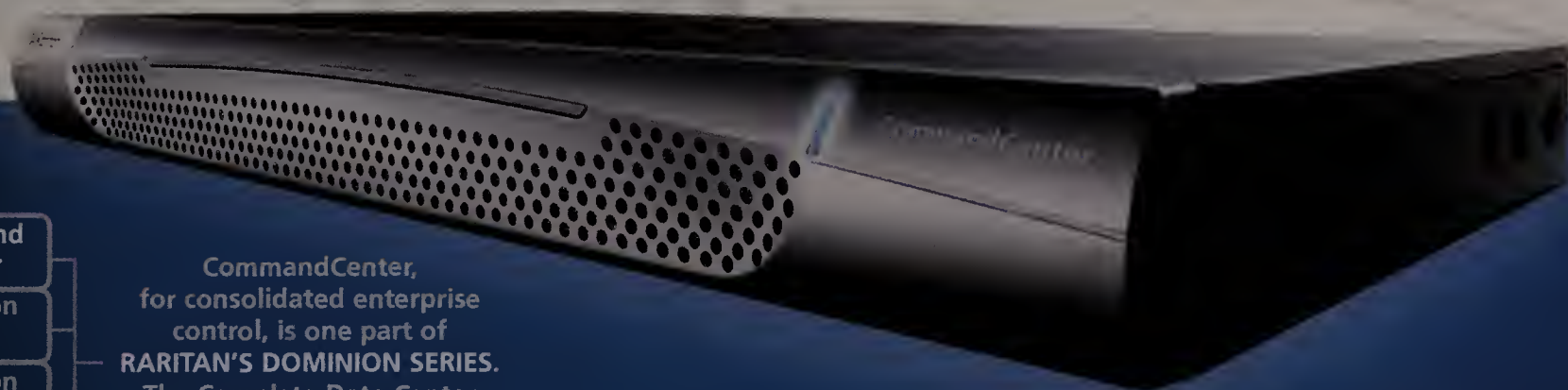
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Switching Tracks

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Q: I am challenged with fostering a change in the culture of a company. Currently it is very political and competitive. Are there any successful tactics or "safe bets" for this effort without having an adverse effect on my career? I understand that a major change like this may be a road to a C-level position, but then again, it can lead to the unemployment line too. Is it worth the risk?

A: In leading change efforts around culture, there are no safe bets. By the nature of fostering change, you will no doubt offend and threaten some people. To attempt to minimize the risk of losing your job, you had best be sure that several senior executives who are actively communicating the change and are true sponsors and champions for this are backing you. Ongoing meetings and perhaps town-hall gatherings should be frequent enough to reinforce management's commitment to this change and the benefits that will be derived from it.

I also suggest getting some organizational psychologists or the equivalent involved who can provide guidance and sup-



port while the transformation is under way.

From a behavioral point of view, by being open, direct and sincere, and constantly communicating senior management's vision, you will begin to convince others of the benefits of change. Winning over some key constituents early on may have a ripple effect, which is what you want.

While there is no safe haven and you will be taking a risk, you will learn a lot from this experience. And even if it does not work out as well as you hope, your efforts will add to your career portfolio and will also look good on your résumé. Employers look for risk-takers and respect those who have strong convictions and work hard in carrying out their mission.

—Beverly Lieberman, president of Halbrecht Lieberman Associates

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Download the application at www.cio.com/eva. Questions? Contact us at eva@cio.com or 888-455-4646.

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Entry Guidelines

- The system must have been operational prior to April 1, 2003.
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- Entrants must agree to be featured, along with their systems and organizations, in a *CIO* article.
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CHANGING YOU

Q: I have postgraduate training in computer science and have 13 years of widely mixed experience in software development, training, project management and quality assurance. I also have more than three years of entrepreneurship experience in these fields. Currently I am working in presales and sales-support for an IT services organization. What are my future growth prospects, and how should I shape my career going forward?

A: In order to decide on a direction for your career, you need to consider what you enjoy most about the kind of work you have been doing and the type of work environment that suits you best. Should you continue on your current track, one option would be to work for a technology product or services company to lead product development initiatives as well as marketing and business development. Positions that offer the biggest financial rewards are often those in sales. The senior-most roles in vendor organizations tend to be filled by executives who have marketing and customer management backgrounds.

Another option is to pursue management roles in large corporations. These include leading large-scale systems integration projects such as ERP implementations. These are often multi-year projects and can include global responsibilities. Having global experience at a senior project and management level will position your career to be tracking a CIO role or equivalent.

—B.L.

CHANGING YOUR MIND

Q: I took a CIO position at a smaller company because I needed a job. However, my heart is not in it. As a professional, I am doing my best to support the team and the company. I want to be fair to the company and myself. Should I continue until I find a position more aligned with my career aspirations, or should I just walk away now to totally focus on new opportunities?

A: Being unemployed while job hunting always leaves some room for doubt: “Was there a problem? Was she performing well?” This is especially true in a market in which many poor performers have been let go under the umbrella of cost reduction. Since you say that you are doing your professional best under the circumstances, then it would seem that you are being as fair as possible to your employer. In fairness to yourself, you should keep your eyes and ears open to the

market, and selectively make contact with top recruiters to let them know that you are available to be considered for larger-scale opportunities. Time is on your side

as the job market continues to slowly improve and your tenure at this “interim” position increases, thereby mitigating an early departure. Being employed but looking tells prospective employers that the choice to move on is yours.

—Mark Polansky, managing director and member of the advanced technology practice at Korn/Ferry International

CHANGING LOYALTIES

Q: I have worked for the same boss for 12 years, and my career has progressed well under his direction. However, he has no aspirations to move up. My next promotion would be to his level, and I would like to move up. How should I approach the CIO with this request?

A: Approach your CIO directly—as soon as possible. Your ambition would not be interpreted as disloyal by any thinking person. Remember, you have given as well as received direction from your superior during a 12-year period: The very definition of loyalty. But now your loyalty is to yourself and your career. If your boss is a true mentor and supporter, he will encourage your continuing success, and should prove to be a valued peer in the future.

—M.P.

CHANGING REPORTING

Q: I shifted to IT from marketing four years ago when our mid-size company implemented ERP, and now I lead the department. I have been reporting to our CEO, but recently I have been asked to report to our vice president of procurement and logistics. Should I accept this reporting structure?

A: If the CEO is indicating he or she is too busy to give you the time you need and views the vice president as a key leader with an interest in IT, then this might be a reasonable move. Do you have projects that directly involve this executive? If so, and you have a good working relationship, then this might be positive for you and the company.

If you perceive this as a demotion, then it's time to consider a job change. Most CIOs will tell you they prefer reporting to the CEO; however, there are times when reporting to another top-line executive can be just as satisfying if that person enables you to be a part of the senior team and provides avenues for participating in senior-level meetings and committees.

—B.L.

STEAMED ENGINE

Q: I was recently moved out of my job because of a political move by a new CTO. I was leading the enterprise's e-business direction and reporting to the vice president of operations, who also was the CIO. How do I address this to my next employer? I have the education and skills to be a CTO or more. But this experience has left me feeling bitter and angry. Should I tell my next employer what happened, or should I just focus on my skills to do the job?

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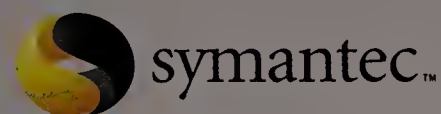
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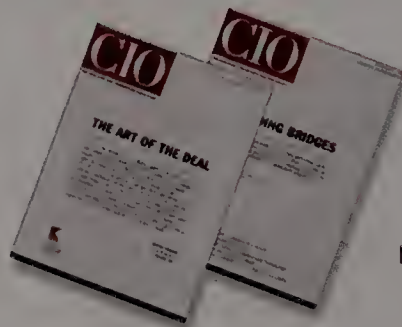
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A: Until you can come to peace with the loss of your job, I'm afraid your bitterness will get in the way. Candidly, it is naive of you to think of the world as a perfect meritocracy where employment decisions are made objectively and without political influence. If you don't care to develop your survival skills, consider a consulting position or possibly a career in the academic or nonprofit worlds. To be sure, there's lots of politics in these fields, too, but you are less likely to encounter there what you have called "reckless behavior." In any case, you should be selling yourself and your capabilities. Simply state the facts—you were let go as a result of a change of leadership, by a CTO who wished to choose his own staff. Put aside your CTO wishes for now and interview for opportunities at your level of experience, not at the level of your future career expectations.

—M.P.

WRONG GAUGE

Q: I have more than 15 years of experience on the technical side of IT at the vice president and director level. I'm shooting for CIO, but I seem to notice a pattern that all CIOs come from the applications side of IT. Is my observation correct?

A: Yes. The technical side of IT—namely the infrastructure and its care and feeding—is not what creates value and competitive advantage for your employer. The engineering, management and support of data centers and IT operations is the "utility" part of what we do, and therefore it is the first to be outsourced, rationalized, consolidated or otherwise minimized. Conversely, innovation in business applications has the potential to optimize business operations—it is therefore crucial and core to any organization's performance. Talk to your CIO about your desire to cross over and get closer to the revenue. Sell your leadership skills and underlying technical expertise; ask for a transfer at whatever level management thinks may be appropriate. Study, work hard and develop your new skills in applications design and development. In the future, you will be pleased to find that your new competencies in business systems, coupled with your previous technology background, will differentiate you as a well-rounded CIO prospect. —M.P. **CIO**

The Web-based Executive Career Counsel column, which can be found online at www.cio.com/counselor, is edited by Director of Online Research Kathleen Kotwica (kkotwica@cio.com).

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From Inception to Implementation—**IT That Matters**



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Use It and Lose It

BY JOHN EDWARDS

DISPOSABLES | In the 18th and early 19th centuries, hand-wrought nails were so precious that when a house burned down, the owner and his friends would sift through the wreckage to retrieve the hardware. Today, thanks to modern mass-production techniques, nails are disposable items.

Modern technology is exerting a similar effect on the way people view many electronic products. Yesterday's exotic, highly prized electronic devices generally are treated with casual disregard by today's users. "We live in a disposable society," observes Randi Altschul, inventor of the world's first—and as yet unsuccessful—disposable mobile phone. (It's made of paper.) "We want everything fast and short term."

In the past, high product price and relatively low repair costs encouraged people to attempt to extend the life of even fairly trivial devices. Today, with product prices and repair costs flipped, it's often cheaper to toss away a device once it breaks or becomes outdated, rather than trying to repair or upgrade it. As a result, a staggering array of products, including RFID tags, displays, mobile phones, digital cameras and printers are all falling, or have already fallen, into the "use it and lose it" category.

With more disposable technologies flooding the mainstream, CIOs face a dilemma. On the

one hand, low-priced throwaway gadgets save enterprises money by reducing or eliminating the costs of repair and maintenance. On the other hand, disposable technologies carry their own baggage, including significant security and environmental concerns. Balancing disposability's risks with its benefits is one of the key challenges CIOs will face in the coming years.

Tracking Disposability

Products are disposable when they become so inexpensive that the buyer has little regard for their purchase price. This, in turn, leads to broader use. In the RFID sector, for example, falling tag prices encourage the tracking of ever less consequential items.

Disposable technologies carry their own baggage, including significant security and environmental concerns.

At the moment, tag prices are still high enough—around 20 cents each—to prevent item-level tracking of low-cost products such as groceries. Jeff Woods, a principal analyst at Gartner, believes that when tags hit the 5 cent level, “then [RFID] can turn into a consumable, disposable technology.”

But RFID can already be considered a disposable technology when it comes to certain high-cost products, such as a plasma TV or a Prada handbag. People are another type of “high-value asset” that can be tracked by RFID. Precision Dynamics makes a wristband, incorporating Texas Instruments' RFID chip technology, that can be worn by hospital patients, schoolchildren, and theme park and sporting event attendees.

At Hyland Hills Water World, a water park in Federal Heights, Colo., RFID wristbands may take the place of cash and credit cards (the park beta-tested the wristbands last year and is considering installing the system this summer). The bands work as wearable debit cards, allowing people to spend money simply by waving their banded wrists in front of readers located at snack bars, gift shops and

other park venues. At the end of the day, bands are thrown away or saved as souvenirs. Although more expensive than bar-code imprinted wristbands, the RFID devices aren't vulnerable to damage caused by pool chemicals, the sun or stretching. “The fact that they're disposable means that we don't have to worry about the bands' long-term physical integrity,” says Bob Owens, an assistant manager at the park.

As with any technology that carries personal or financial information, particularly a disposable product, security is critical. Financial and identification data stored on the band is encrypted, preventing unauthorized users from reading data. While users can use their credit card to purchase things in the park, card

account data isn't stored on the band. “That information is kept on our server,” says Owens.

The system also eliminates the park's need to transport large sums of cash to a bank at the end of the day. “There's a great convenience factor with this technology,” says Owens. The park also benefits from “breakage”—the unspent credit that remains on bands after visitors leave the park.

Throwaway Circuits

Unlike RFID tags, which provide only tracking capabilities, inexpensive monitoring circuits enable enterprises to carefully monitor the condition of key assets. Cypak, for instance, has developed a sensor-based monitoring technology that's aimed at product delivery surveillance and control. Using special conductive inks, Cypak prints a circuit, environmental sensors and an antenna, and it mounts microelectronics directly onto shipping packages. The company's SecurePak technology stores a unique ID that can be programmed with unalterable information about the package's source, destination and contents. SecurePak can then record whether the package it's

A Throwaway Idea

The sad tale of the paper phone

Back in 1999, inventor Randi Altschul thought she had a killer idea—an inexpensive mobile phone, priced at about \$10, that could be tossed away on a whim. Five years later, Altschul's killer idea may itself be dead.

At the telecom boom's height, Altschul's invention sounded like a surefire proposition. Her phones would be so cheap that fast-food chains would want to sell advertising-emblazoned models along with their combo meals. “I took the toy mentality to telecom and turned a phone into a toy,” she says. “It can be made of paper or polyester and is so inexpensive that it's disposable.”

Altschul's dream ran into trouble when she tried to attract financial backers.

Altschul's harrowing experiences in the world of high-tech capitalism led her to self-publish a book: *Financiers, Lawyers and Other Assorted Snakes*. By the time Altschul was ready to move on, the bloom had faded from the telecom market rose and investors were licking wounds created by other seemingly no-lose telecom ideas. “Nothing ever hit the market, though many people talked [to me],” she says.

The mobile phone market has now evolved beyond Altschul's original concept. With more phone buyers looking for high-end features, such as MP3 file downloading and color cameras, the market for a 1999-style disposable phone has faded. Yet Altschul remains undaunted. “I still envision the same opportunities and much more,” she says. “It will just begin a little later than I wanted.”

—J.E.

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attached to has been opened, resealed or tampered with in any way during shipping and can even tell shippers and package recipients when and where such incidents occurred. The circuitry adds about \$2 to a package's cost, notes Jakob Ehrensward, Cypak's CEO. "This is basically a chip on a sticker," he says. The reader costs about \$10.

The Swedish Postal Service recently tested SecurePak for shipping high-value and confidential items such as computer equipment, precious artwork and government documents. Thord Axelsson, the postal service's chief security officer, says the technology lets postal employees quickly determine when and where a package has been opened, making it cheaper and easier for postal authorities to pinpoint security weaknesses. Without the technology, finding the source of a package-tampering incident could require one to two

tion engine that's designed to keep unauthorized users from resetting the sensors or peering into shipping information, even after packaging material containing the SecurePak circuitry has been thrown away. "The information is protected even after it leaves our system," says Axelsson.

Gone, but Not Forgotten

As a growing number of disposable devices find their way into everyday life, some people are concerned about their environmental impact. The technology industry has struggled for years with the problem of how to effectively rescue and recycle an ever-increasing torrent of "digi-effluvia." Many people now fear that a flood of future disposable devices such as mobile phones, PDAs, digital cameras and MP3 players will glut already overflowing landfills.

Many people fear that a flood of future disposable devices will glut already overflowing landfills.

weeks of investigation. With SecurePak, the information is available almost instantly.

SecurePak can even tell its user exactly how a package was tampered with such as "if it was opened indirectly or if they used a knife on the package," says Axelsson. A customer slicing a package with a knife, for example, may violate a shipper's instructions designed to protect the merchandise. SecurePak's sensors also reveal if shipments have been exposed to potentially damaging environments, such as extreme heat or cold or rough handling.

Axelsson says the technology is cheap enough to be disposable, yet rugged enough to be reused several times. Although Axelsson was initially dubious that such a small, inexpensive technology could provide so much information, the recent tests have, in his opinion, proven SecurePak's value.

Axelsson isn't worried about SecurePak-equipped packages falling into the wrong hands. The system includes a built-in encryp-

Such concern is not unfounded. Yet many disposable products are being developed with an eye toward protecting the environment. The design for Altschul's paper-based disposable mobile phone, for example, is more environmentally friendly than its plastic and metal counterparts. "Our phones will be made to disintegrate with the elements over time," she promises. Organic light-emitting diodes (OLEDs), which could ultimately be sprayed onto disposable items such as signs and cereal boxes to create colorful and animated displays, are also considered to be eco-friendly. "You can eat the new OLEDs," notes Peter Harrop, chairman of IDTechEx, an RFID consultancy. Emerging disposable devices also can be successfully integrated into existing recycling programs. "We are very green about the environment in Sweden, and we already have special programs for packing materials," observes Axelsson.

Some kinds of disposable technology could actually help preserve the environ-

Landfill Fodder

"Only one billion RFID tags have been sold in the last 50 years. The next billion will be delivered in the next year."

—Peter Harrop, chairman, IDTechEx

ment. Digital paper, which can be printed on several times before wearing out, could reduce the number of trees felled each year to produce the blizzard of paper needed to run most offices. Additionally, unalterable RFID tags or sensor circuits, when embedded into hazardous products, could let authorities trace items that are illegally discarded by their owners. RFID could also be used to spot and reclaim tagged items containing valuable materials that are dumped into landfills.

A Molecular Level

As digital components grow smaller, they will become increasingly integrated into everyday objects, such as office machines, home appliances and even clothing. As a result, people and businesses eventually may begin to lose sight of the need for recycling. Few people, for example, think about recycling the buttons on a discarded shirt or the zipper on a worn pair of jeans. The garment as a whole may be recycled, but not each and every component.

Yet the need to recycle isn't likely to go away, and highly integrated technologies such as the smart clothing currently being developed by Sundaresan Jayaraman could actually make technology recycling far more complex. Jayaraman, a professor of textile engineering at the Georgia Institute of Technology, is working on several types of smart clothing, including

UNDER DEVELOPMENT

garments that incorporate computing and communications functions.

Figuring out how to recycle smart clothing promises to be a daunting task. "Disposable [smart] clothing will be a challenge because it will involve lots of different materials, all close against one another," says Edwin Thomas, a materials science and engineering professor at MIT, who is also working on smart clothing.

Eventually, in order to recycle electronic products effectively and efficiently, recovery technologies will have to begin mimicking natural processes by working on a molecular level. "Right now, we have this cereal box, and we think this has to be recycled into more paper," says Christine Peterson, president of the Foresight Institute, a technology think tank. "That's what we know how to do now, and that's what's cheap to do now, but that certainly doesn't have to be the case," she notes. Molecular recycling would allow discarded products—such as a shirt incorporating a radio transceiver and an OLED screen—to be recycled without first breaking it down to its component parts: cotton, metal, plastic and so on. "We need to get much better at taking arrangements of atoms and molecules and changing them into what we want," says Peterson.

In the meantime, Thomas believes that manufacturers should work together to make devices that use similar, easily recyclable materials. He notes that tech vendors could take a tip from ketchup makers. "Ketchup bottles used to be made from seven different kinds of plastic," he notes. "They were terrific bottles, except that you commingled seven different plastics, and there was really no way to separate them." Now, thanks to a unified standard, the bottles are easily recyclable. Like the ketchup makers, device vendors could collaborate on using similar materials in cases, circuit boards and other major components. "It's a way of thinking green," says Thomas.

John Edwards is a freelance writer based in Arizona. He can be reached at john@john-edwards.com.



Circuits on Everything!

NANOTECH | Nanotechnology has many reputations, ranging from "historic opportunity" to "potential cataclysm." At Nanosys, a Palo Alto, Calif.-based research and development company, they'd rather that it just prove useful.

"Our goal is to be able to provide a [nanotech-based] component that [our partners] can seamlessly integrate into their own manufacturing process," says Stephen Empedocles, cofounder and director of business development at Nanosys. That integration could lead to any of a number of product improvements, from lowering manufacturing costs to increasing a part's life expectancy to enhancing performance.

The company is currently working in three areas of potential product development: photovoltaic, or solar cells; thin-film electronics, such as those used in flat-panel displays; and surface coating technology that would allow flexible electronic circuits to be printed onto objects.

Nanosys technology has attracted the attention of a number of highly visible—if sometimes rather secretive—partners. The

company has received backing from the CIA's investment arm, In-Q-Tel. Plus it currently has agreements with the likes of the Defense Advanced Research Projects Agency and Intel (with whom it is working on a nanotech-based memory project. "The only group that's probably more secretive than [the CIA] is Intel," Empedocles quips).

On the less mysterious side, Empedocles says that a collaboration with Matsushita Electric Works in Japan will likely result in new nanotech-enhanced photovoltaics that will allow Matsushita to integrate solar cells with building materials, creating a roofing tile that doubles as a source of electricity, for example. Products based on the technology are slated for release in 2006, according to Empedocles. Other Nanosys products also are making headway, such as its thin-film technology, which could find its way into less expensive and less power-hungry laptop computer screens in only a few years.

"We have a lot of long-term visions," Empedocles says. "[But] we create a lot of short-term opportunities."

—Christopher Lindquist



Guard the Application Layer

BY ERIC KNORR

Firewalls alone are no longer enough to protect your online assets

SECURITY | Back in the day, just before the launch of a dotcom I now regret being associated with, I asked our chief developer about security risks to subscriber data. “We’ve put two network cards in the Web server,” he grinned. “So the database communicates with the Web server on a separate network. Anyone who hacked into our Web server wouldn’t even know the database was there.”

Maybe that was good enough for 1998. But today, hackers and their attack strategies are smarter and much more ambitious. The threat of the day is the application attack, which sneaks through your firewall and into your Web applications. And yes, some of these attacks like to dine on tasty customer data.

If you’ve got a low-profile site, you probably don’t need to worry. But if a lot of people know about you, you’re at risk. It may sound paranoid, but someone could abscond with your customers’ Social Security numbers and you’d never know.

So why don’t ordinary firewalls stop these attacks? Because they’ve been designed to appear as well-formed traffic, with no unusually large packets or suspicious mismatches between address and content to sound the alarm. One of the most frightening examples is the SQL injection. Here, hackers can use one of your own HTML forms to run unauthorized queries on your database. Another threat: command execution. Whenever Web applications pass commands to a shell appli-

cation, a clever hack can cause arbitrary commands to execute on the server.

Other attacks are simpler. For example, HTML comments often contain sensitive information, including log-ins left by incautious programmers. Ultimately, the lines of attack on the application layer—from altering cookies to changing hidden fields in HTML forms—are limited only by hacker imagination. But the good news is that most of these attacks can be stopped cold.

Two complementary approaches, when combined, provide a solid defense. First, use an application scanner to scour your Web apps for vulnerabilities. Then get yourself a Web application firewall to keep the bad guys from breaking and entering.

Application scanners basically launch a host of simulated attacks on your server and report on the results. KaVaDo ScanDo, Sanctum AppScan Audit and SPI Dynamics all do a pretty thorough job itemizing flaws and recommending fixes. AppScan Audit is particularly interesting, because it’s the after-the-fact member of a suite of products that help programmers catch vulnerabilities as they code. None of these packages, however, can beat a full-scale audit by security pros.

Once you’ve plugged the holes as best you can, it’s time to deploy a Web application firewall. These work in an interesting way: by learning what well-formed traffic to and from an application looks like and identifying the

Ultimately, the lines of attack on the application layer—from altering cookies to changing hidden fields in HTML forms—are limited only by hacker imagination.

unexpected. To do this, Web app firewalls must inspect packets at a deeper level than do ordinary firewalls. Check Point is the best-known brand in this area, but the other vendors are relatively obscure: KaVaDo, NetContinuum, Sanctum and Teros. Some of these Web app firewalls are available as software, others as appliances, others as either. But don’t mistake this for plug and play, even in the case of the appliances. As with intrusion detection, you need to calibrate Web application firewalls carefully to reduce false positives without letting sneaky attacks through.

In the end, I wish such elaborate defense measures were unnecessary. Thanks to spam and ever more sophisticated attacks, it seems inevitable that the public Internet will devolve into overlapping virtual private networks. Meanwhile, we have no choice but to turn to increasingly clever gadgets to stave off the barbarian hordes.

Eric Knorr is executive editor at large at InfoWorld. He can be reached at eknorr@pacbell.net.

A photograph of Joe Torre, a man with dark hair and a mustache, wearing a dark polo shirt, smiling and holding a baseball. In the background, a woman with long blonde hair and a young girl are running barefoot on a sandy beach. The woman is wearing a white tank top and light-colored pants, and the girl is wearing a white tank top and dark shorts. The ocean waves are visible in the background.

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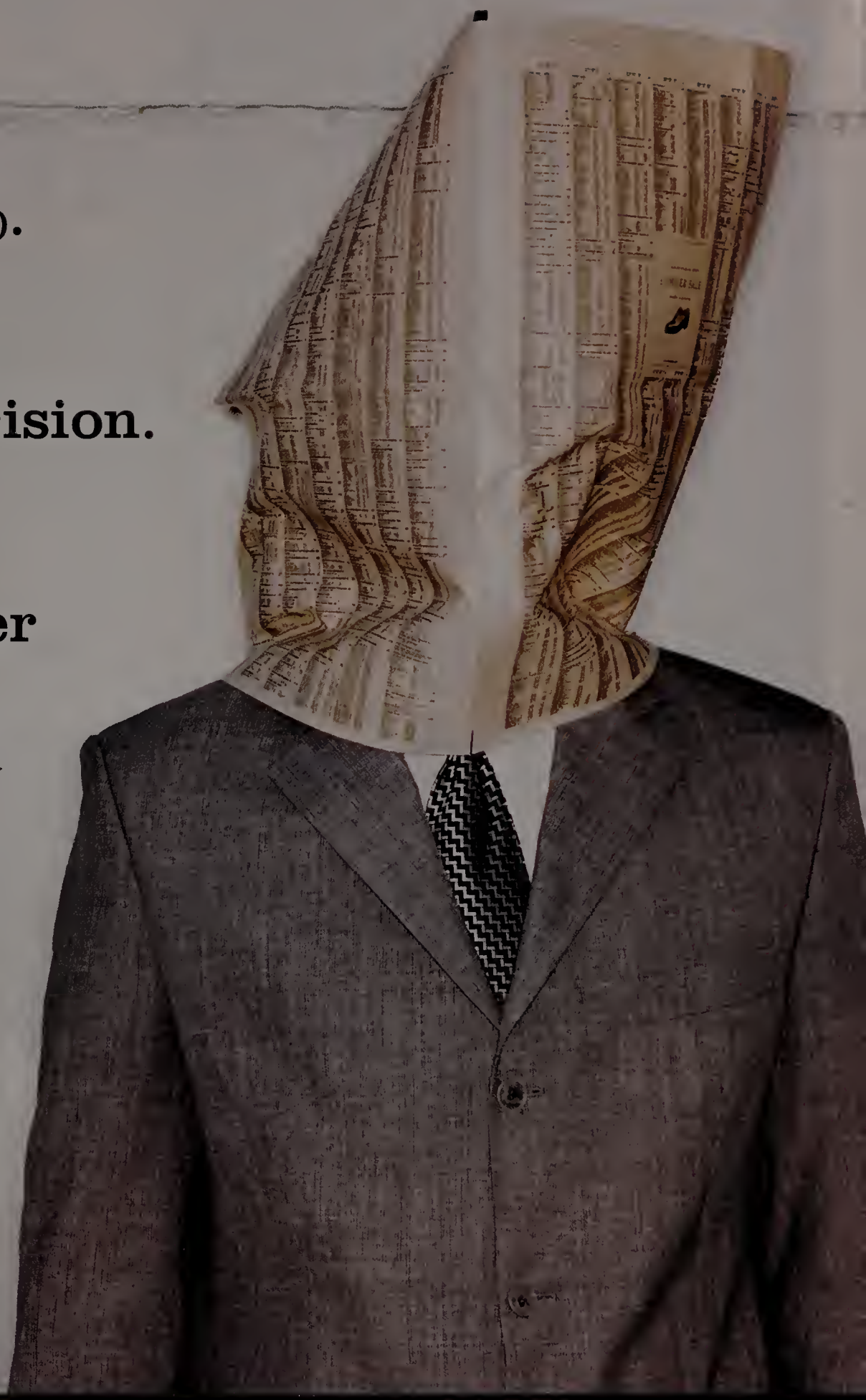
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EXECUTIVE

Summaries

April 15, 2004

COVER STORY Hand Over Security

By Christopher Koch | 48

There is growing evidence that security responsibility should be independent of the IT department—survey data shows that companies with independent security functions enjoy more effective safeguards. With security reporting to IT, there is potential conflict of interest for the CIO, who might be tempted to give short shrift to security concerns in favor of getting IT projects in on time and under budget. Catching hackers requires the ability to think like a criminal, something IT employees are not trained to do. And, of course, there's the enormous IT workload that distracts from security concerns. On the other hand, even if security moves out of IT, accountability wouldn't necessarily go with it. CIOs might end up with little influence but would still have to answer when something went wrong. But at Capital IQ and Siemens Canada, responsibility for security has been successfully separated from IT. If that's not possible, security advocates say the responsible person must have the policy-based recourse to report to a higher authority than the CIO.

“Security and IT should be like the Supreme Court and the executive branch. You want them to work together, but you want that independent oversight.”

—WILLIAM MURPHY, CTO OF FINANCIAL DATA AND ANALYTICAL SOFTWARE PROVIDER CAPITAL IQ

AT&T Wireless Self-Destructs

By Christopher Koch | 56

LAST FALL, AT&T Wireless frantically tried to complete a CRM upgrade to Siebel 7. It had to be done in time to handle the customer service challenges accompanying a Federal Communications Commission deadline for allowing customers to change carriers without changing their phone numbers. The effort was a failure. Systems crashed and stayed down. Customer reps could not keep up, and angry customers abandoned the carrier. The weakened company was ultimately bought out by rival Cingular. Through exclusive interviews with company insiders, we piece together what went wrong and highlight the key project management lessons, including the pitfalls of poor planning and the deleterious effects of an ill-timed outsourcing push.

In Sync With His CEO

By Susannah Patton | 66

JOHN BROWNE, the CEO of British Petroleum, has pursued an aggressive leadership agenda that has unleashed a wave of mergers and acquisitions across the energy industry and set the trend for ruthless cost-cutting. John Leggate, Browne's handpicked CIO, has responded by taking on the task of integration, using Browne's aggressive cost-cutting tactics to slash redundant jobs and programs, and continuing to outsource dozens of key IT services. Leggate's proven himself as both a risk-taker—not afraid to invest in new technologies for the long term—and a pragmatist, working diligently to calculate the payback for BP's IT investments and to show how IT can help shape corporate strategy. His five years as a successful CIO under Browne teaches lessons in how to mirror the philosophies and strategies of the business and its chief executive, and master the many challenges and politics of M&A integration.

Something Ventured, Something Gained

By Kim Girard | 74

VENTURE CAPITAL FIRMS AND CIOs are increasingly plumbing a symbiotic relationship. VCs get guidance and reality checks, as well as potential early customers. CIOs gain influence over technology development and exposure to the latest innovations. The most popular format for the relationship is a VC-sponsored CIO council, such as the 15-month-old Technology Council run by J.P. Morgan Partners, which has 24 CIO members who collectively represent \$6 billion in technology spending. Two-thirds of council CIOs—including those of 1-800-Flowers.com, Domino's Pizza, Guitar Center and House of Blues—come from J.P. Morgan Partners' portfolio companies. The rest are “outsider” CIOs—including those from E-Trade, Otis Elevator, Priceline.com and the Vanguard Group—who were invited to give an independent perspective. CIOs thinking of participating in such councils must be careful to avoid conflicts of interest, and VCs need to know the CIOs well enough not to waste their time on irrelevant technologies.

How to Put Your Customers to Work

By C.K. Prahalad and Venkat Ramaswamy | 82

IN THEIR BOOK, *The Future of Competition*, C.K. Prahalad and Venkat Ramaswamy contend that companies need not (and should not) go it alone when trying to create value. Their research suggests an emerging economic model of value cocreation, in which consumers and companies routinely collaborate to create personalized value. In the world of cocreation, imagine every individual who interacts with the company as a “consumer,” and discard the artificial distinctions among enterprises and households. And don't mistake self-service for customer involvement. Cocreation, the authors maintain, is not the transfer or outsourcing of activities to customers or a marginal customization of products and services. It isn't scripting or staging of customer events around the company's offerings. Those kinds of company-customer interactions no longer satisfy most consumers today. It's the cocreation experience (not the offering) that is the basis of value for each individual.

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